



**INDUSTRIAL ENCLOSURE SYSTEMS**



**19" ELECTRONIC COMPONENTS**



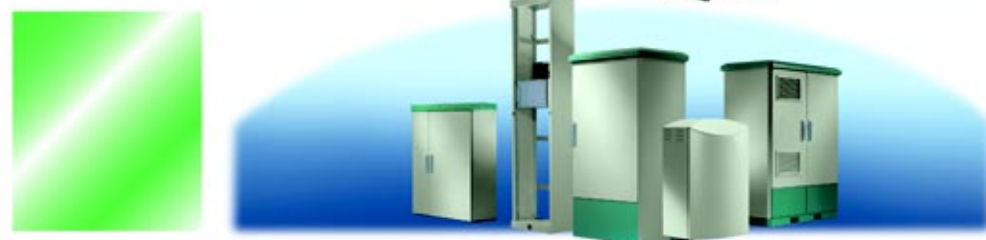
**ENCLOSURE CLIMATE CONTROL & PROCESS COOLING**



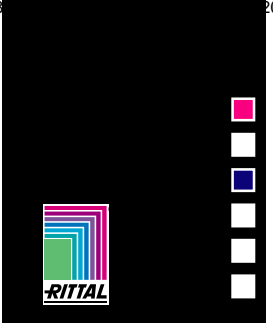
**POWER DISTRIBUTION COMPONENTS**



**DATA COMMUNICATIONS & NETWORKING PRODUCTS**



**TELCO & WIRELESS OUTDOOR ENCLOSURES**



**Rittal Industrial Enclosures & Climate Control Products**



# INDUSTRIAL STRENGTH

**INDUSTRIAL, COMMERCIAL, WIREWAY & CLIMATE CONTROL PRODUCT BUYER'S GUIDE**



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## RITTAL INDUSTRIAL ENCLOSURES AND CLIMATE CONTROL SOLUTIONS

Tough, hard-working products combined with innovative designs and comprehensive solutions — these are the hallmarks of the Rittal line-up of industrial products. Comprised of boxes, cabinets, wireway, climate control and accessories, our industrial solutions can go to work every day in your harsh and demanding environments. Look to Rittal's industrial strength product offering for all of your industrial packaging needs.



Nothing says **TOTAL SOLUTIONS** like the Rittal family of industrial products. Designed to offer you the utmost in enclosure packaging, the offering includes everything from junction and wallmount boxes to freestanding and disconnect enclosures, wireway, HMI solutions and thermal management products.

Our industrial products are **READY TO GO TO WORK** in your next installation. Whether that is a machine tool, petrochemical, commercial or process control environment, Rittal's enclosure solutions can provide the ideal product mix for your installation solution.

Look to Rittal for your **VALUE ADDED SOLUTIONS**. Design an integrated enclosure solution with our industrial packaging products. Combine together your cabinet selection with our range of climate control units and accessory products for a complete, smartly engineered solution.





**TABLE OF CONTENTS**

**Wallmount Enclosures ..... WMT 1-45**

**Wireway & Trough ..... WWY 1-13**

**Freestanding Enclosures ..... FST 1-27**

**FMD Enclosures ..... FMD 1-47**

**Operator Interface Solutions ..... HMI 1-79**

**Noncorrosive Solutions ..... NON 1-83**

**Commercial Products ..... COM 1-33**

**Special Solutions ..... SPE 1-8**

**Climate Control Products ..... CLI 1-26**

**Enclosure Accessories ..... ACC 1-57**

**Technical Appendix ..... TEC 1-33**



↑ Rittal keeps its finger on the pulse of **INDUSTRY TRENDS** and market requirements to provide you with innovative enclosure solutions. Like our ergonomically-designed human machine interface solutions that feature contemporary aesthetics combined with sleek functionality.

↑ Check out our **BREADTH OF PRODUCT LINE** with our extensive range of packaging solutions. You can complement our expertise in the industrial setting with a plethora of solutions, ranging from 19" electronic components and sub racks to process chillers, busbar power distribution components and networking cabinet solutions.

↑ Join the world of **RITCAL RESOURCES** and get a wealth of helpful information and tools. With our extensive network of websites, you can have instant access to a world of products, information and support resources from Rittal. Or utilize our library of product literature and software designed to provide you with updated technical information.



## WORLD-CLASS MANUFACTURING COUPLED WITH SOLID WORKMANSHIP

Designed to handle a range of industrial installations, the Rittal offering of enclosure products can boast of the strength and protection you need. You see, the quality and consistency of our product line is the direct result of a careful blend of skillful workmanship combined with both advanced manufacturing capabilities and conventional skills.

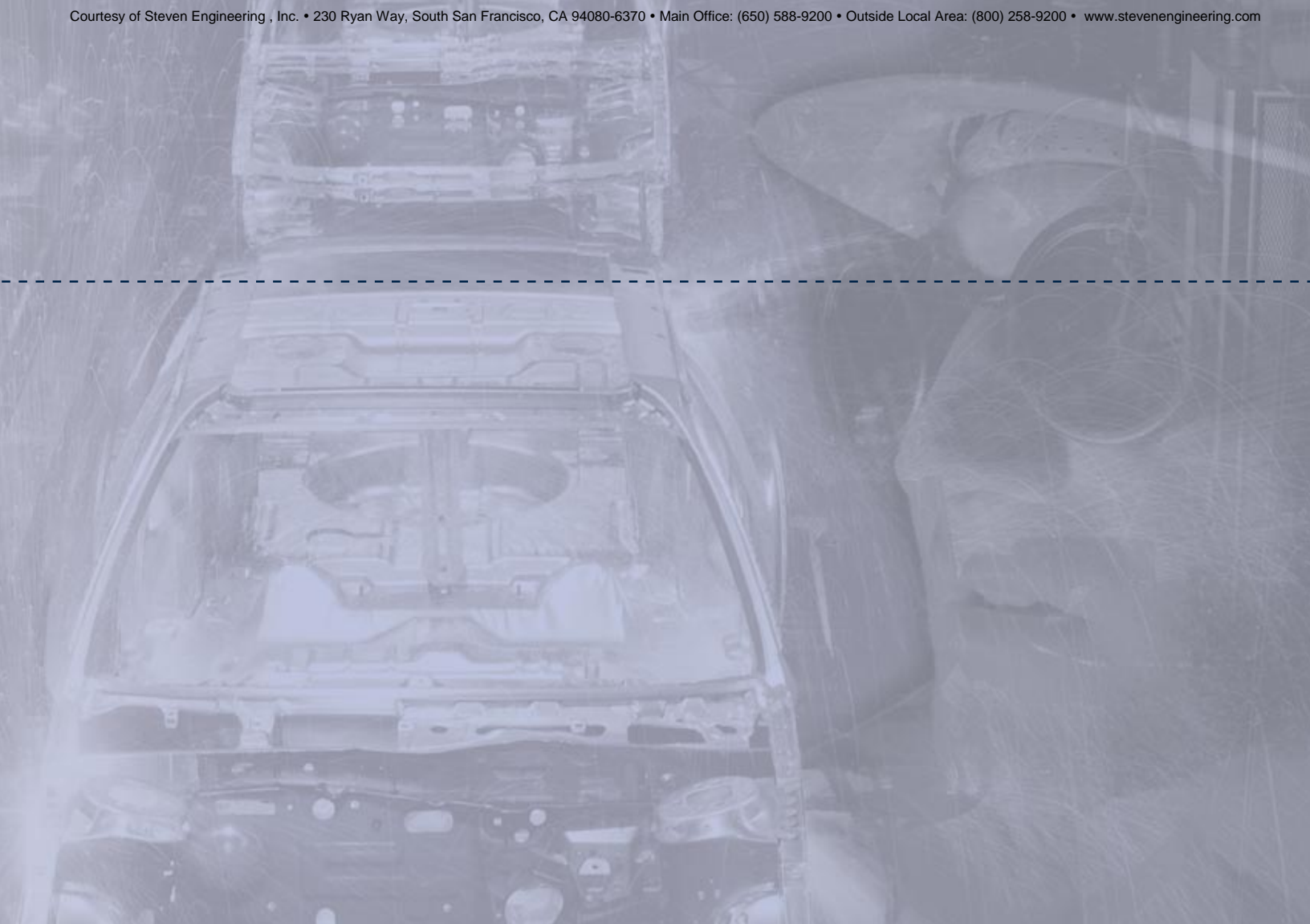


Our U.S headquarters and **FLAGSHIP MANUFACTURING OPERATIONS** facility is located in Springfield, Ohio. This facility also houses our customer service and technical teams that are always ready to assist you in your installation questions and orders.

You can be assured of **STATE-OF-THE-ART PROCESSES** with all of the Rittal products. Like our foamed-on-place gasketing that ensures a tight, reliable seal for increased protection of your installed components. Nothing says quality like a Rittal-manufactured packaging solution.

Urbana, Ohio is the location of our second **HIGHLY ADVANCED** manufacturing and warehousing facility. Our goal at all of our facilities is to provide a versatile production operation geared to produce high throughput runs of standard products.





**SPECIAL PRODUCT ENGINEERING** and manufacturing capabilities allow us to adapt our standard product designs to meet special customer requirements. From holes and cutouts to pre-assembly, special colors and climate control integration, Rittal's modification program can provide you with your ideal packaging solution.

Our products deliver **EXCEPTIONAL PRODUCT PERFORMANCE** for most industrial applications, with such features as our powder paint and wet paint capabilities. Combine this feature with the precision quality of the products and the result is solid, hard-working solutions.

**PRIDE OF WORKMANSHIP** and a well-trained manufacturing team is reflected in every enclosure product produced at our third manufacturing facility in Fremont, Indiana. Select any of the Rittal products and see that quality is one job where we do not compromise.



# RITTAL & ELECTROMATE ENCLOSURE & WIREWAY CROSS REFERENCE MATRIX

The following chart will help you to determine where to find the Rittal products you need, based on your NEMA and material requirements.

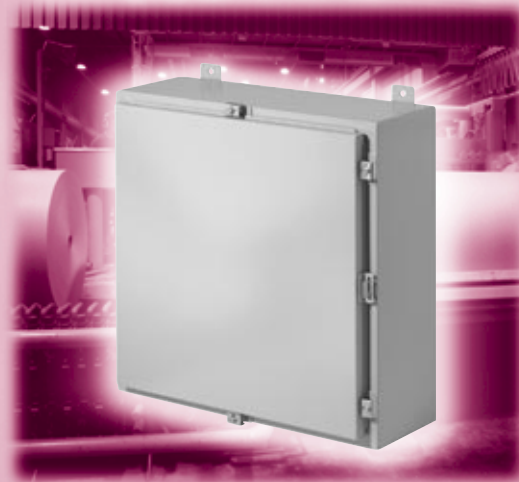
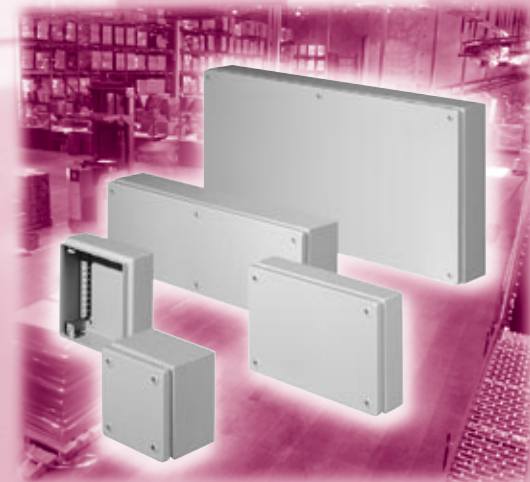
NEMA	Carbon Steel	Stainless Steel	Fiberglass	Polycarbonate	Aluminum	Galvanized/ Galvaneal Steel
1	COM 3-4, 7-8, 10					COM 9
3R			NON 42		COM 1-2	COM 5-6, 11-12
4	WMT 1-2, 5-6, 11-12, 15-20 FST 3, 13-14 FMD 3-4				HMI 31-32	
4X		NON 1-2, 7-9, 11-16, 19, 21, 23-24, 31-32	NON 33-34, 39-41, 43-44	NON 4	NON 3, 10, 17-18	
6P			NON 35-38, 45-46			
12	WMT 14, 21-26 WWY 1-6 FST 1-2, 9-12 FMD 1-2, 5-14 HMI 5-6, 9-10, 25-26	NON 20, 22, 31-32			HMI 11-24, 27-30	
12/13	WMT 3-4, 7-10, 13 HMI 1-4, 7-8 FST 4-8	NON 5, 25-30			NON 6	COM 13



# WALLMOUNT SOLUTIONS

## WALLMOUNT ENCLOSURES

KL Junction Boxes .....	WMT 1-2
Screw Cover Junction Boxes .....	WMT 3
Lift-Off Hinge Cover Boxes .....	WMT 4
EB Instrument Enclosures .....	WMT 5-6
Continuous Hinge Cover Enclosures .....	WMT 7-8
Continuous Hinge Quick Release Boxes .....	WMT 9
Continuous Hinge Wing Turn Boxes .....	WMT 10
Continuous Hinge Cover Boxes .....	WMT 11
Clamp Cover Junction Enclosures .....	WMT 12
Handy Box Enclosures .....	WMT 13
Two Door Wallmount Enclosures .....	WMT 14
AE Wallmount Enclosures .....	WMT 15-16
Legacy Series Enclosures .....	WMT 17-18
One Door NEMA 4 Wallmount Boxes .....	WMT 19-20
One Door NEMA 12 Wallmount Enclosures ...	WMT 21-24
EL 3-Part Wallmount Enclosures .....	WMT 25-26
Technical Drawings .....	WMT 27-45



# KL Junction Boxes



## NEMA Rated Junction Boxes Without Gland Panels

Rittal's KL Series NEMA rated junction boxes offer perfect protection against harsh environments for delicate electrical and electronic equipment. The knife-edge perimeter of the enclosure prevents entry of dirt and liquids when the enclosure is opened. Integrated mounting rails with holes inside the enclosure offer flexible options for component installation. A powder paint finish provides a durable, long lasting surface.

## NEMA Rated Junction Boxes With Gland Panels

These junction boxes save both time and money with pre-cut gland openings and covers for interconnecting multi-port installations.



## Configuration

- NEMA 1, 4, 12/IP 66, (without gland panels) or NEMA 12/IP 55, (with gland panels)
- UL/CSA/TÜV approvals
- Welded cold rolled steel body
- Foamed-on gaskets
- Integrated mounting rails
- Optional mounting panel
- Wide range of accessories
- Off-the-shelf availability
- Powder paint and E-coat primer provide superior corrosion protection
- Knife-edge design protects against liquid entry
- Rear mounting holes allow direct wallmounting or the use of optional mounting feet

## Technical Specifications

- Material:**
- *Housing:* 17 ga/1.38 mm sheet steel
  - *Cover:* 18 ga/1.25 mm sheet steel
- Finish/color:**
- *Housing and cover:* powder painted, RAL 7032 pebble grey

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

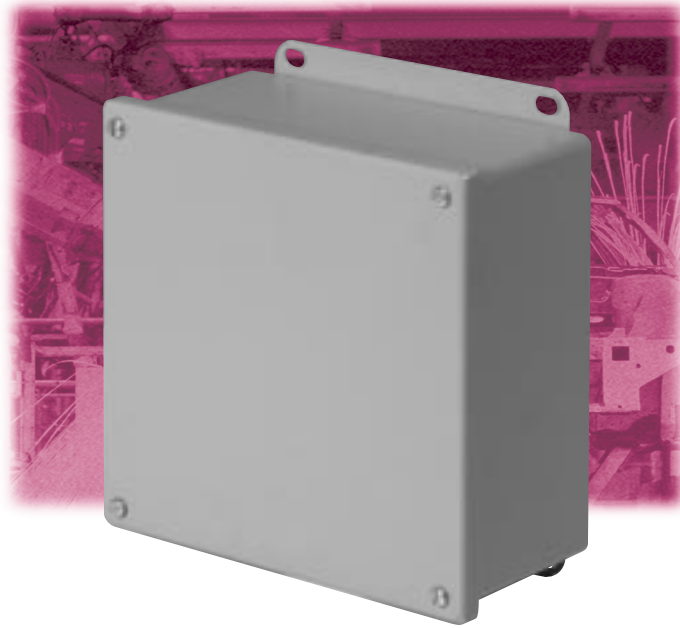
Pages .....WMT 27-28

Enclosure				Mounting Panel										
Part No.	Approx. outside dimensions H"xW"xD"	NEMA rating	No. of gland openings	Exact outside dimensions						Part No.	Dimensions			
				inches			mm				inches		mm	
				H	W	D	H	W	D		H	W	H	W
<b>Junction Boxes Without Gland Panels</b>														
1514210	6x6x3	1, 4, 12	-	5.91	5.91	3.15	150	150	80	1560700	4.92	5.31	125	135
1515210	6x12x3	1, 4, 12	-	5.91	11.81	3.15	150	300	80	1561700	4.92	11.22	125	285
1517210	8x12x3	1, 4, 12	-	7.87	11.81	3.15	200	300	80	1563700	6.89	11.22	175	285
1500210	6x6x5	1, 4, 12	-	5.91	5.91	4.72	150	150	120	1560700	4.92	5.31	125	135
1501210	6x12x5	1, 4, 12	-	5.91	11.81	4.72	150	300	120	1561700	4.92	11.22	125	285
1502210	8x8x5	1, 4, 12	-	7.87	7.87	4.72	200	200	120	1562700	6.89	7.28	175	185
1503210	8x12x5	1, 4, 12	-	7.87	11.81	4.72	200	300	120	1563700	6.89	11.22	175	285
1504210	8x16x5	1, 4, 12	-	7.87	15.75	4.72	200	400	120	1564700	6.89	15.16	175	385
1505210	8x20x5	1, 4, 12	-	7.87	19.69	4.72	200	500	120	1565700	6.89	19.09	175	485
1507210	12x12x5	1, 4, 12	-	11.81	11.81	4.72	300	300	120	1567700	10.83	11.22	275	285
1508210	12x16x5	1, 4, 12	-	11.81	15.75	4.72	300	400	120	1568700	10.83	15.16	275	385
1509210	12x20x5	1, 4, 12	-	11.81	19.69	4.72	300	500	120	1569700	10.83	19.09	275	485
1511210	16x16x5	1, 4, 12	-	15.75	15.75	4.72	400	400	120	1571700	14.76	15.16	375	385
<b>Junction Boxes With Gland Panels</b>														
1530210	6x12x5	1, 12	2	5.91	11.81	4.72	150	300	120	1561700	4.92	11.22	125	285
1531210	8x12x5	1, 12	2	7.87	11.81	4.72	200	300	120	1563700	6.89	11.22	175	285

Accessories					
Part No.	Wallmounting bracket	Cover hinge	Quick release fastener	Ground strap 7' long/11AWG	Pole mounting kit
<b>Junction Boxes Without Gland Panels</b>					
1514210	1590000	1592000	1593000	2564000	2584000
1515210	1590000	1592000	1593000	2564000	2584000
1517210	1590000	1592000	1593000	2564000	2584000
1500210	1590000	1592000	1593000	2564000	2584000
1501210	1590000	1592000	1593000	2564000	2584000
1502210	1590000	1592000	1593000	2564000	2584000
1503210	1590000	1592000	1593000	2564000	2584000
1504210	1590000	1592000	1593000	2564000	2584000
1505210	1590000	1592000	1593000	2564000	2584000
1507210	1590000	1592000	1593000	2564000	2584000
1508210	1590000	1592000	1593000	2564000	2584000
1509210	1590000	1592000	1593000	2564000	2584000
1511210	1590000	1592000	1593000	2564000	2584000
<b>Junction Boxes With Gland Panels</b>					
1530210	1590000	1592000	1593000	2564000	2584000
1531210	1590000	1592000	1593000	2564000	2584000



# Screw Cover Junction Boxes



## Carbon Steel NEMA Enclosures

These NEMA rated junction boxes are designed primarily for indoor use to house pilot devices, such as limit switches, foot switches, pushbuttons, selector switches, pilot lights, etc., and to protect such equipment against dirt and dust, external condensation, and spraying of water and oil.

### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Plated steel captive screws
- Lift-off cover
- External mounting brackets
- Mounting panel provisions installed (except E 404SC)

### Technical Specifications

- Material:**
- *Enclosure/cover:* 14 or 16 gauge carbon steel (see table)
- Finish/color:**
- *Enclosure/cover:* polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - *Optional mounting panels:* painted white

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page .....WMT 29

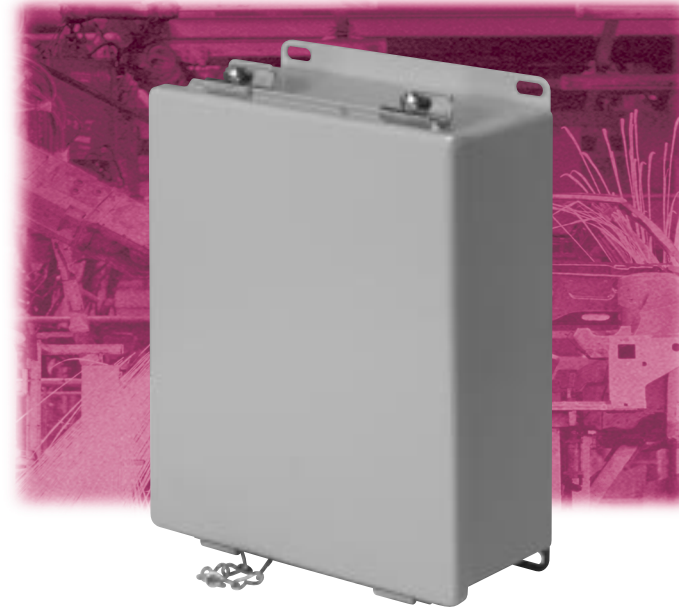
Part No.	Enclosure			Mounting Panel			
	Outside dimensions (inches)			Part No.	H	W	Usable depth
	H	W	D				
E 404SC*	4.00	4.00	3.00	NONE	-	-	-
E 604SC*	6.00	4.00	3.00	E 6P4	4.88	2.88	2.50
E 806SC	8.00	6.00	3.50	E 8P6	6.88	4.88	3.00
E 6044SC*	6.00	4.00	4.00	E 6P4	4.88	2.88	3.50
E 606SC*	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 1008SC	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 1210SC	12.00	10.00	5.00	E 12P10	10.88	8.88	4.50
E 8066SC	8.00	6.00	6.00	E 8P6	6.88	4.88	5.50
E 1212SC	12.00	12.00	6.00	E 12P12	10.88	10.88	5.50
E 1412SC	14.00	12.00	6.00	E 14P12	12.88	10.88	5.50

\* 16 gauge

Part No.	Accessories			
	Terminal block kit	Terminal rails	Window kit	Touch-up paint
E 404SC*	-	-	-	E L21
E 604SC*	-	-	-	E L21
E 806SC	E 6JTMA	E 8JS	-	E L21
E 6044SC	-	-	-	E L21
E 606SC*	-	-	-	E L21
E 1008SC	E 8JTMA	E 10JS	E PWK53NF	E L21
E 1210SC	E 10JTMAXD	E 12JS	E PWK53NF	E L21
E 8066SC	E 6JTMA	E 8JS	-	E L21
E 1212SC	E 12JTMA	E 12JS	E PWK95NF	E L21
E 1412SC	E 12JTMA	E 14JS	E PWK95NF	E L21

\* 16 gauge

# Lift-Off Hinge Cover Boxes



## Carbon Steel Wallmount Enclosures

These NEMA rated junction boxes are designed to house pilot devices, such as limit switches, foot switches, pushbuttons, selector switches, pilot lights, etc., and to protect this equipment against dirt and dust, spraying of water, oil or coolant.

### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Plated steel captive clamps, screws, chain and clip
- Lift-off cover
- External mounting brackets
- Mounting panel provisions installed (except E 404LP)

### Technical Specifications

- Material:**
- *Enclosure/cover:* 14 or 16 gauge carbon steel (see table)
- Finish/color:**
- *Enclosure/cover:* polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - *Optional mounting panels:* painted white

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page .....WMT 29

Part No.	Enclosure			Mounting Panel			
	Outside dimensions (inches)			Part No.	H	W	Usable depth
	H	W	D				
E 404LP*	4.00	4.00	3.00	NONE	-	-	-
E 604LP*	6.00	4.00	3.00	E 6P4	4.88	2.88	2.50
E 806LP	8.00	6.00	3.50	E 8P6	6.88	4.88	3.00
E 6044LP*	6.00	4.00	4.00	E 6P4	4.88	2.88	3.50
E 606LP*	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 1008LP	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 1412LP	14.00	12.00	6.00	E 14P12	12.88	10.88	5.50

\* 16 gauge

Part No.	Accessories			
	Terminal block kit	Terminal rails	Window kit	Touch-up paint
E 404LP*	-	-	-	E L21
E 604LP*	-	-	-	E L21
E 806LP	E 6JTMA	E 8JS	-	E L21
E 6044LP*	-	-	-	E L21
E 606LP*	-	-	-	E L21
E 1008LP	E 6JTMA	E 10JS	E PWK53NF	E L21
E 1412LP	E 12JTMA	E 14JS	E PWK95NF	E L21

\* 16 gauge

# EB Instrument Enclosures



## NEMA Rated Instrument Enclosures

Rittal's EB Series instrument enclosures offer protection for dense wiring and sensitive small instruments. These junction boxes combine many of the advantages of Rittal's AE and KL Series enclosures, at an economical cost.

Features include standard 180° hinges and locks with double-bit inserts. A foamed-on gasket and knife-edge perimeter ensure NEMA 4 protection.



## Configuration

- NEMA 1, 4, 12/IP 66 protection
- UL/CSA/TÜV approvals
- Permanent hinges, removable door
- Turnbuckle locks for easy access and secure seal
- Mounting panel included
- Rear mounting holes allow direct wall mounting or the use of optional mounting feet
- Integrated grounding provisions
- One piece construction, continuously welded seams
- Knife-edge design protects against liquid entry
- Foamed-on gasket ensures perfect seal
- Off-the-shelf availability
- Powder paint and E-coat primer provide superior corrosion protection

## Technical Specifications

### Material:

- *Housing:* 17 ga/1.38 mm sheet steel
- *Door:* 18 ga/1.25 mm sheet steel
- *Mounting panel:* hot-dipped galvanized zinc

### Finish/color:

- *Housing and door:* powder painted, RAL 7032 pebble grey
- *Mounting panel:* Type M

## Protection Ratings

NEMA Type  1  4  4X  12  13

## Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

## Technical Drawings

Page ..... WMT 30

Part No.	Enclosure								Mounting Panel				
	Approximate outside dimensions H"xW"xD"	NEMA rating	Exact outside dimensions						Part No.	Dimensions			
			inches			mm				inches		mm	
H	W	D	H	W	D	H	W	H	W				
1551600	6x6x3	1, 4, 12	5.91	5.91	3.15	150	150	80	included	5.31	4.92	135	125
1553600	6x6x5	1, 4, 12	5.91	5.91	4.72	150	150	120	included	5.31	4.92	135	125
1751600	8x6x5	1, 4, 12	7.87	5.91	4.72	200	150	120	included	7.28	4.92	185	125
1549600	8x8x5	1, 4, 12	7.87	7.87	4.72	200	200	120	included	7.28	6.89	185	175
1554600	12x8x5	1, 4, 12	11.81	7.87	4.72	300	200	120	included	11.22	6.89	285	175
1555600	12x12x5	1, 4, 12	11.81	11.81	4.72	300	300	120	included	11.22	10.83	285	275
1556600	16x12x5	1, 4, 12	15.75	11.81	4.72	400	300	120	included	15.16	10.83	385	275
1752600	10x8x6	1, 4, 12	9.84	7.87	6.10	250	200	155	included	9.25	6.89	235	175
1753600	12x10x6	1, 4, 12	11.81	9.84	6.10	300	250	155	included	11.22	8.86	285	225
1754600	14x12x6	1, 4, 12	13.78	11.81	6.10	350	300	155	included	13.19	10.83	335	275
1755600	16x14x6	1, 4, 12	15.75	13.78	6.10	400	350	155	included	15.16	12.80	385	325
1578600	24x12x6	1, 4, 12	23.62	11.81	6.10	600	300	155	included	23.03	10.83	585	275

Part No.	Accessories				
	Wallmounting brackets		Handles		Ground strap 7" long/11 AWG
	5/16" standoff	1-5/8" standoff	Thumb turn	T-handle	
1551600	1590000	2503200	2576000	2575000	2564000
1553600	1590000	2503200	2576000	2575000	2564000
1751600	1590000	2503200	2576000	2575000	-
1549600	1590000	2503200	2576000	2575000	2564000
1554600	1590000	2503200	2576000	2575000	2564000
1555600	1590000	2503200	2576000	2575000	2564000
1556600	1590000	2503200	2576000	2575000	2564000
1752600	1590000	2503200	2576000	2575000	-
1753600	1590000	2503200	2576000	2575000	-
1754600	1590000	2503200	2576000	2575000	-
1755600	1590000	2503200	2576000	2575000	-
1578600	1590000	2503200	2576000	2575000	2564000



# Continuous Hinge Cover Enclosures



## Carbon Steel Junction Boxes

These NEMA rated junction boxes offer perfect protection for delicate electrical and electronic equipment such as limit switches, foot switches, pushbuttons, selector switches and pilot lights. Installed equipment is protected against dirt, dust, oil and water seepage.



## Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous steel hinge
- Door removed by pulling steel hinge pin
- Plated steel cover clamps and stainless screws
- External mounting brackets
- Mounting panel provisions installed (except E 404CH)

## Technical Specifications

### Material:

- *Enclosure/door:* 14 or 16 gauge carbon steel (see table)

### Finish/color:

- *Enclosure/door:* polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
- *Optional mounting panels:* painted white

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Page** ..... **WMT 31**

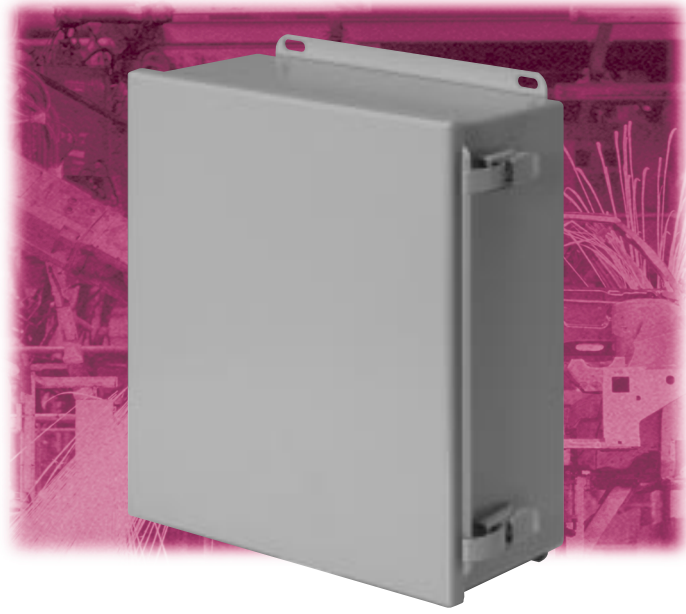
Part No.	Enclosure			Part No.	Mounting Panel		
	Outside dimensions (inches)				H	W	Usable depth
	H	W	D				
E 404CH*	4.00	4.00	3.00	NONE	-	-	-
E 604CH*	6.00	4.00	3.00	E 6P4	4.88	2.88	2.50
E 806CH	8.00	6.00	3.50	E 8P6	6.88	4.88	3.00
E 6044CH*	6.00	4.00	4.00	E 6P4	4.88	2.88	3.50
E 606CH*	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 808CH	8.00	8.00	4.00	E 8P8	6.88	6.88	3.50
E 1008CH	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 12064CH	12.00	6.00	4.00	E 12P6	10.88	4.88	3.50
E 1210CH	12.00	10.00	5.00	E 12P10	10.88	8.88	4.50
E 8066CH	8.00	6.00	6.00	E 8P6	6.88	4.88	5.50
E 10086CH	10.00	8.00	6.00	E 10P8	8.88	6.88	5.50
E 10106CH	10.00	10.00	6.00	E 10P10	8.88	8.88	5.50
E 1212CH	12.00	12.00	6.00	E 12P12	10.88	10.88	5.50
E 1412CH	14.00	12.00	6.00	E 14P12	12.88	10.88	5.50
E 1614CH	16.00	14.00	6.00	E 16P14	14.88	12.88	5.50
E 12108CH	12.00	10.00	8.00	E 12P10	10.88	8.88	7.50
E 14128CH	14.00	12.00	8.00	E 14P12	12.88	10.88	7.50
E 16148CH	16.00	14.00	8.00	E 16P14	14.88	12.88	7.50
E 161410CH	16.00	14.00	10.00	E 16P14	14.88	12.88	9.50

\* 16 gauge

Part No.	Accessories			
	Terminal block kit	Terminal rails	Window kit	Touch-up paint
E 404CH*	-	-	-	E L21
E 604CH*	-	-	-	E L21
E 806CH	E 6JTMA	E 8JS	-	E L21
E 6044CH*	-	-	-	E L21
E 606CH*	-	-	-	E L21
E 808CH	E 8JTMA	E 8JS	-	E L21
E 1008CH	E 8JTMA	E 10JS	E PWK53NF	E L21
E 12064CH	E 6JTMA	E 12JS	-	E L21
E 1210CH	E 10JTMAXD	E 12JS	E PWK53NF	E L21
E 8066CH	E 6JTMA	E 8JS	-	E L21
E 10086CH	E 8JTMA	E 10JS	E PWK53NF	E L21
E 10106CH	E 10JTMA	E 10JS	E PWK53NF	E L21
E 1212CH	E 12JTMA	E 12JS	E PWK95NF	E L21
E 1412CH	E 12JTMA	E 14JS	E PWK95NF	E L21
E 1614CH	E 14JTMA	E 16JS	E PWK95NF	E L21
E 12108CH	E 10JTMAXD	E 12JS	E PWK53NF	E L21
E 14128CH	E 12JTMA	E 14JS	E PWK95NF	E L21
E 16148CH	E 14JTMA	E 16JS	E PWK95NF	E L21
E 161410CH	E 14JTMA	E 16JS	E PWK95NF	E L21

\* 16 gauge

# Continuous Hinge Quick Release Boxes



## NEMA Rated Wallmount Enclosures

These NEMA rated junction boxes are designed primarily for indoor use to house pilot devices, such as limit switches, foot switches, pushbuttons, selector switches and pilot lights, and to protect such equipment against splashing water, seepage of water, falling or hose directed water, and spraying of water and oil.

### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous steel hinge
- Door removed by pulling steel hinge pin
- Quick-release clamps
- External mounting brackets
- Mounting panel provisions installed (except E 404CHQR)

### Technical Specifications

- Material:**
- *Enclosure/door:* 14 or 16 gauge carbon steel (see table)
- Finish/color:**
- *Enclosure/door:* polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - *Optional mounting panels:* painted white

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page .....WMT 32

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	H	W	Usable depth
	H	W	D				
E 404CHQR*	4.00	4.00	3.00	NONE	-	-	-
E 604CHQR*	6.00	4.00	3.00	E 6P4	4.88	2.88	2.50
E 806CHQR	8.00	6.00	3.50	E 8P6	6.88	4.88	3.00
E 606CHQR*	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 1008CHQR	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 1210CHQR	12.00	10.00	5.00	E 12P10	10.88	8.88	4.50
E 1412CHQR	14.00	12.00	6.00	E 14P12	12.88	10.88	5.50
E 1614CHQR	16.00	14.00	6.00	E 16P14	14.88	12.88	5.50

\* 16 gauge

Accessories				
Part No.	Terminal block kit	Terminal rails	Window kit	Touch-up paint
E 404CHQR*	-	-	-	E L21
E 604CHQR*	-	-	-	E L21
E 806CHQR	E 6JTMA	E 8JS	-	E L21
E 606CHQR*	-	-	-	E L21
E 1008CHQR	E 8JTMA	E 10JS	E PWK53NF	E L21
E 1210CHQR	E 10JTMAXD	E 12JS	E PWK53NF	E L21
E 1412CHQR	E 12JTMA	E 14JS	E PWK95NF	E L21
E 1614CHQR	E 14JTMA	E 16JS	E PWK95NF	E L21

\* 16 gauge

# Continuous Hinge Wing Turn Boxes



## Electromate Wallmount Enclosures

These NEMA rated junction boxes are designed primarily for indoor use to house pilot devices, such as limit switches, foot switches, pushbuttons, selector switches, pilot lights, etc., and to protect these devices against dirt and dust, oil seepage, external condensation, or coolant.

### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous steel hinge
- Door removed by pulling steel hinge pin
- Butterfly draw latch
- External mounting brackets
- Mounting panel provisions installed

### Technical Specifications

- Material:**
- *Enclosure/door:* 14 or 16 gauge carbon steel (see table)
- Finish/color:**
- *Enclosure/door:* polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - *Optional mounting panels:* painted white

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page .....WMT 33

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	H	W	Usable depth
	H	W	D				
E 604CHWL*	6.00	4.00	4.48	E 6P4	4.75	2.88	4.04
E 806CHWL	8.00	6.00	4.48	E 8P6	6.75	4.88	4.04
E 1008CHWL	10.00	8.00	4.48	E 10P8	8.75	6.88	4.04
E 1210CHWL	12.00	10.00	5.48	E 12P10	10.75	8.88	5.04
E 1412CHWL	14.00	12.00	6.48	E 14P12	12.75	10.88	6.04
E 1614CHWL	16.00	14.00	6.48	E 16P14	14.75	12.88	6.04

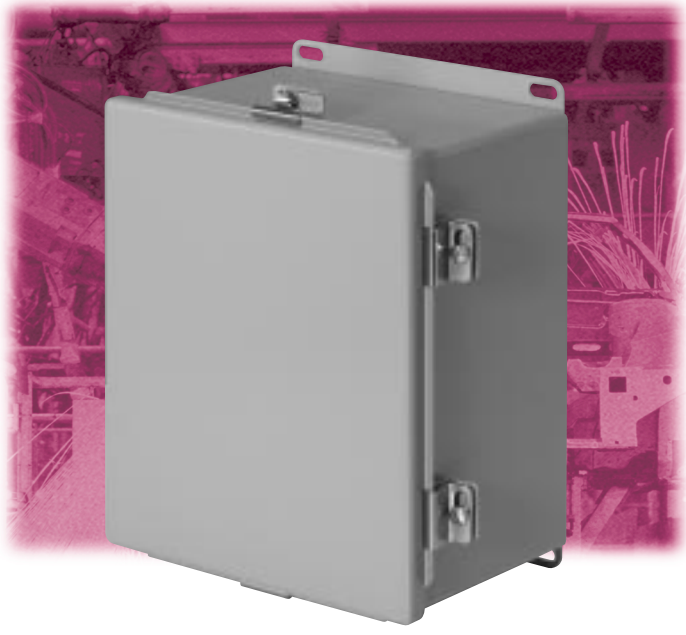
\* 16 gauge

Accessories				
Part No.	Terminal block kit	Terminal rails	Window kit	Touch-up paint
E 604CHWL*	-	-	-	E L21
E 806CHWL	E 6JTMA	E 8JS	-	E L21
E 1008CHWL	E 8JTMA	E 10JS	E PWK53NF	E L21
E 1210CHWL	E 10JTMAXD	E 12JS	E PWK53NF	E L21
E 1412CHWL	E 12JTMA	E 14JS	E PWK95NF	E L21
E 1614CHWL	E 14JTMA	E 16JS	E PWK95NF	E L21

\* 16 gauge



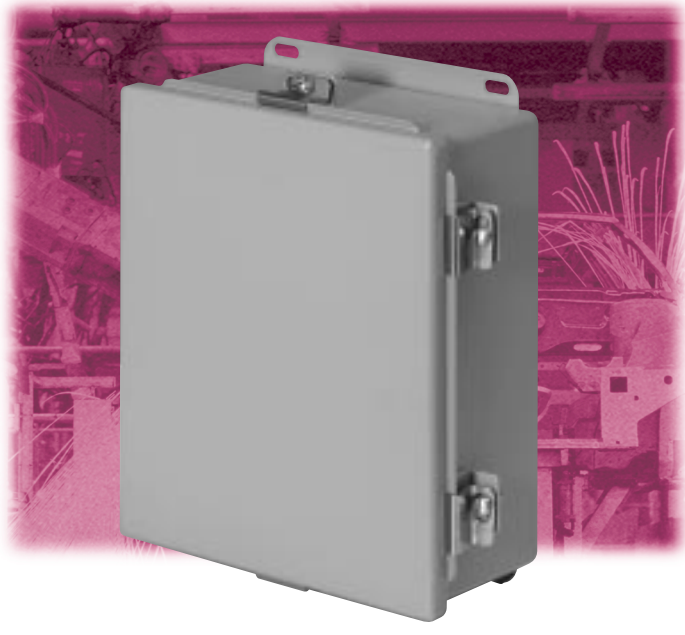
# Continuous Hinge Cover Boxes



**NEMA 4 Carbon Steel Enclosures**  
 These NEMA rated junction boxes offer perfect protection for delicate electrical and electronic equipment. They are designed to house pilot devices, such as limit switches, foot switches, pushbuttons, selector switches and pilot lights. Installed equipment is protected against splashing water, seepage of water, falling or hose directed water, severe external condensation and spraying of water, oil or coolant.



# Clamp Cover Junction Enclosures



**NEMA Rated Carbon Steel Boxes**  
 These NEMA rated junction boxes offer perfect protection for delicate electrical and electronic equipment. They are designed to house pilot devices, such as limit switches, foot switches, pushbuttons, selector switches and pilot lights. They can be used inside or outside to protect installed equipment against splashing water, seepage of water, falling or hose directed water, severe external condensation and spraying of water, oil or coolants.



**Configuration**

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous steel hinge
- Door removed by pulling steel hinge pin
- Stainless steel captive clamps and screws
- External mounting brackets
- Mounting panel provisions installed (except E 404CHNF)

**Technical Specifications**

- Material:**
- Enclosure/door: 14 or 16 gauge carbon steel (see table)
- Finish/color:**
- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces, inside and outside - ANSI 61 grey
  - Optional mounting panels: painted white

**Protection Ratings**

**NEMA Type**  1  4  4X  12  13

**Certifications/Approvals**

**Listings**  UL  CUL  CSA  TÜV

**Technical Drawings**

Page ..... WMT 34

**Configuration**

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Stainless steel cover clamps and screws
- External mounting brackets
- Mounting panel provisions installed (except E 404NF)

**Technical Specifications**

- Material:**
- Enclosure/door: 14 or 16 gauge carbon steel (see table)
- Finish/color:**
- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces, inside and outside - ANSI 61 grey
  - Optional mounting panels: painted white

**Protection Ratings**

**NEMA Type**  1  4  4X  12  13

**Certifications/Approvals**

**Listings**  UL  CUL  CSA  TÜV

**Technical Drawings**

Page .....WMT 33

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	H	W	Usable depth
	W	W	D				
E 404CHNF*	4.00	4.00	3.00	NONE	-	-	-
E 604CHNF*	6.00	4.00	3.00	E 6P4	4.88	2.88	2.50
E 806CHNF	8.00	6.00	3.50	E 8P6	6.88	4.88	3.00
E 606CHNF*	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 1008CHNF	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 1210CHNF	12.00	10.00	5.00	E 12P10	10.88	8.88	4.50
E 10086CHNF	10.00	8.00	6.00	E 10P8	8.88	6.88	5.50
E 1212CHNF	12.00	12.00	6.00	E 12P12	10.88	10.88	5.50
E 1412CHNF	14.00	12.00	6.00	E 14P12	12.88	10.88	5.50
E 1614CHNF	16.00	14.00	6.00	E 16P14	14.88	12.88	5.50

\* 16 gauge

Accessories				
Part No.	Terminal block kit	Terminal rails	Window kit	Touch-up paint
E 404CHNF*	-	-	-	E L21
E 604CHNF*	-	-	-	E L21
E 806CHNF	E 6JTMA	E 8JS	-	E L21
E 606CHNF*	-	-	-	E L21
E 1008CHNF	E 8JTMA	E 10JS	E PWK53NF	E L21
E 1210CHNF	E 10JTMA	E 12JS	E PWK53NF	E L21
E 10086CHNF	E 8JTMA	E 10JS	E PWK53NF	E L21
E 1212CHNF	E 12JTMA	E 12JS	E PWK95NF	E L21
E 1412CHNF	E 14JTMA	E 14JS	E PWK95NF	E L21
E 1614CHNF	E 14JTMA	E 16JS	E PWK95NF	E L21

\* 16 gauge

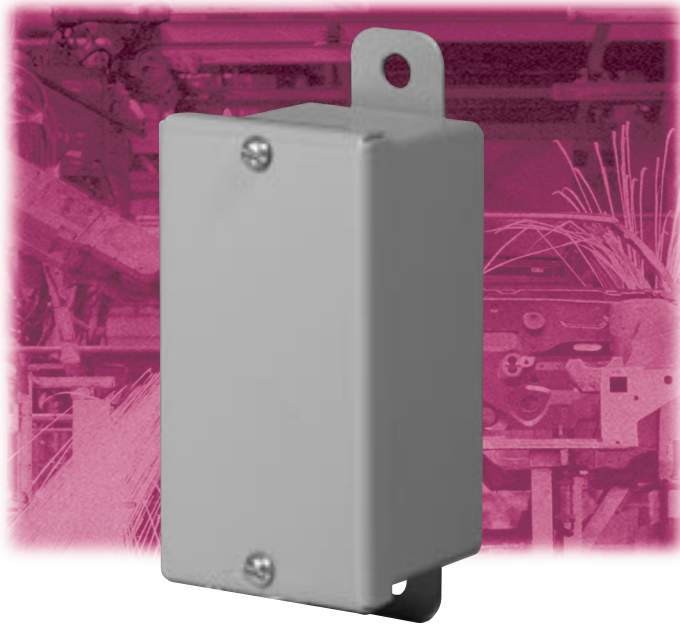
Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	H	W	Usable depth
	H	W	D				
E 404NF*	4.00	4.00	3.00	NONE	-	-	-
E 806NF	8.00	6.00	3.50	E 8P6	6.88	4.88	3.00
E 606NF*	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 1210NF	12.00	10.00	5.00	E 12P10	10.88	8.88	4.50
E 1614NF	16.00	14.00	6.00	E 16P14	14.88	12.88	5.50

\* 16 gauge

Accessories				
Part No.	Terminal block kit	Terminal rails	Window kit	Touch-up paint
E 404NF*	-	-	-	E L21
E 806NF	E 6JTMA	E 8JS	-	E L21
E 606NF*	-	-	-	E L21
E 1210NF	E 10JTMAXD	E 12JS	E PWK53NF	E L21
E 1614NF	E 14JTMA	E 16JS	E PWK95NF	E L21

\* 16 gauge

# Handy Box Enclosures



## Small Carbon Steel Boxes

These NEMA rated boxes are designed primarily for indoor use to house pilot devices, such as limit switches, foot switches, pushbuttons, selector switches, pilot lights, etc., and to protect such equipment against dirt, dust, oil and water seepage.

### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Plated steel screws hold cover tight
- External mounting brackets

### Technical Specifications

- Material:**
- Enclosure/cover: 16 gauge carbon steel
- Finish/color:**
- Enclosure/cover: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

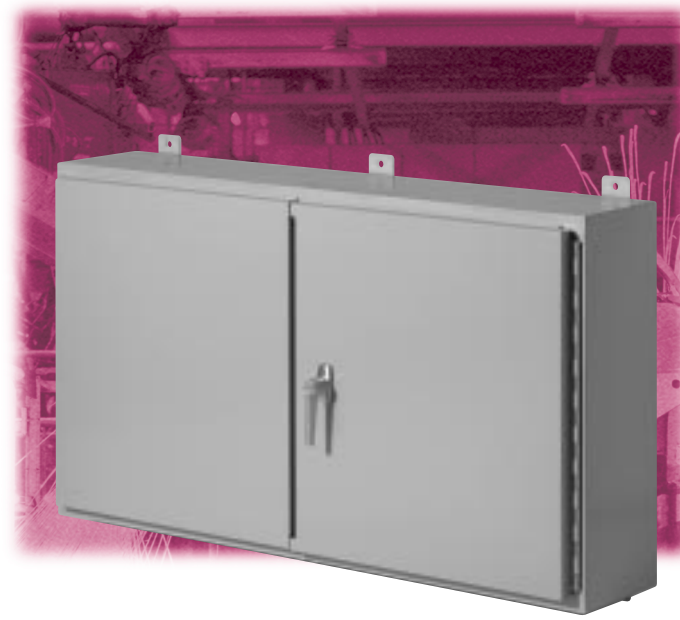
**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... WMT 35

Part No.	Enclosure			Accessories
	Outside dimensions (inches)			
	H	W	D	Touch-up paint
E 4022HB	4.00	2.00	2.00	E L21
E 4033HB	4.25	2.88	2.63	E L21

# Two Door Wallmount Enclosures



## Large Carbon Steel Boxes

These NEMA rated enclosures are designed for indoor use to protect enclosed equipment against lint and dust, external condensation, and spraying of water, oil or coolant.

### Configuration

- Continuously welded seams, finished smooth
- Neoprene strip gasket
- Continuous hinge with removable pin
- Gasketed overlapping doors
- 3 point latch with key-locking handle
- Door and body stiffeners in larger sizes
- Mounting panel provisions installed
- External mounting brackets
- Print pocket included

### Technical Specifications

- Material:**
- Enclosure/door: 14 gauge carbon steel
- Finish/color:**
- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces – ANSI 61 grey outside and white inside
  - Optional mounting panels: painted white

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... WMT 36

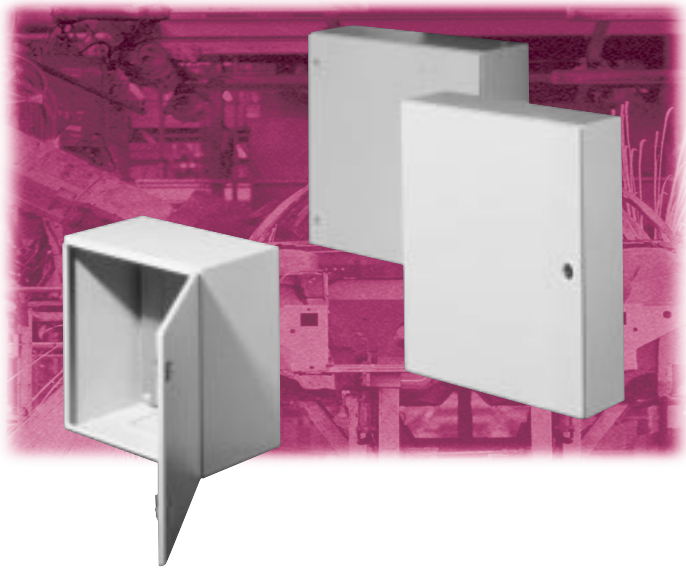
Part No.	Enclosure			Mounting Panel			
	Outside dimensions			Part No.	H	W	Usable depth
	H	W	D				
E 244208WF	24.00	42.00	8.00	E 42P24	21.00	39.00	8.00
E 244808WF	24.00	48.00	8.00	E 48P24	21.00	45.00	8.00
E 364812WF	36.00	48.00	12.00	E 48P36	33.00	45.00	12.00
E 366012WF	36.00	60.00	12.00	E 60P36	33.00	57.00	11.37*
E 424212WF	42.00	42.00	12.00	E 42P42	39.00	39.00	12.00

\* Usable depth reduced by .625" at door stiffener.

Accessories						
Part No.	Door stop kit	Drip shield kit	Terminal block kit	Terminal rails	Window kit	Touch-up paint
E 244208WF	E DSTOPK	E DK42	E 36NTMA3	E 24NS	E PWK1711NF	E L21
E 244808WF	E DSTOPK	E DK48	E 36NTMA3	E 24NS	E PWK1711NF	E L21
E 364812WF	E DSTOPK	E DK48	E 36NTMA3	E 36NS	E PWK2919NF	E L21
E 366012WF	E DSTOPK	E DK60	E 36NTMA3	E 36NS	E PWK3523NF	E L21
E 424212WF	E DSTOPK	E DK42	E 36NTMA3	E 42NS	E PWK3523NF	E L21



# AE Wallmount Enclosures



## NEMA Rated Wallmount Enclosures

Rittal's AE compact enclosures can be used for many different types of applications. Their NEMA 4 or NEMA 12 protection rating is ensured through a secure locking system, foamed-on gaskets, and knife-edge perimeter. They feature a body constructed from cold rolled steel, steel doors, mounting panels, and pre-installed cable entry panels.



## Configuration

- Vertical mounting rails on doors
- Right or left hand hinging on all single door models
- Turnbuckle or rod type locks for easy access and secure seal
- Rear mounting holes allow direct wallmounting or the use of optional mounting feet
- One piece body construction with continuously welded seams
- Knife-edge design protects against liquid entry
- Integrated grounding provisions
- Mounting panel included
- Powder paint provides superior corrosion protection
- Foamed-on gaskets ensure perfect seal
- Wide range of accessories
- Standard EMI/RFI versions available

## Technical Specifications

- Material:**
- Sheet steel
  - *Housing:* 16 ga/1.5 mm
  - *Door:* 14 ga/2 mm (except AE 1032, 1035: 16 ga/1.5 mm)
  - *Mounting panel:* 11 gauge hot-dipped galvanized zinc
- Finish/color:**
- *Housing and door:* powder painted, RAL 7032 pebble grey
  - *Mounting panel:* Type M

## Protection Ratings

**NEMA Type** 1 3R 4 12 13

## Certifications/Approvals

**Listings** UL CUL CSA TÜV

## Technical Drawings

Pages .....WMT 37-40

Part No.	Enclosure							Mounting Panel					
	Approximate outside dimensions H"xW"xD"	NEMA rating	No. of doors	Exact outside dimensions						Dimensions			
				inches			mm			inches		mm	
	H	W	D	H	W	D	H	W	H	W	H	W	
1032600	12x8x5	1, 12	1	11.81	7.87	4.72	300	200	120	10.83	6.38	275	162
1035600	12x8x6	1, 12	1	11.81	7.87	6.10	300	200	155	10.83	6.38	275	162
1030600	12x15x6	1, 3R, 4, 12	1	11.81	14.96	6.10	300	380	155	10.83	13.15	275	334
1033600	12x12x8	1, 3R, 4, 12	1	11.81	11.81	8.27	300	300	210	10.83	10.00	275	254
1031600	12x15x8	1, 3R, 4, 12	1	11.81	14.96	8.27	300	380	210	10.83	13.15	275	334
1380600	15x15x8	1, 3R, 4, 12	1	14.96	14.96	8.27	380	380	210	13.98	13.15	355	334
1039600	15x24x8	1, 3R, 4, 12	1	14.96	23.62	8.27	380	600	210	13.98	21.61	355	549
1034600	16x12x8	1, 3R, 4, 12	1	15.75	11.81	8.27	400	300	210	14.76	10.00	375	254
1045600	20x16x8	1, 3R, 4, 12	1	19.69	15.75	8.27	500	400	210	18.70	13.94	475	354
1050600	20x20x8	1, 3R, 4, 12	1	19.69	19.69	8.27	500	500	210	18.50	17.68	470	449
1038600	24x15x8	1, 3R, 4, 12	1	23.62	14.96	8.27	600	380	210	22.44	13.15	570	334
1060600	24x24x8	1, 3R, 4, 12	1	23.62	23.62	8.27	600	600	210	22.44	21.61	570	549
1076600	30x24x8	1, 3R, 4, 12	1	29.92	23.62	8.27	760	600	210	28.74	21.61	730	549
1077600	30x30x8	1, 3R, 4, 12	1	29.92	29.92	8.27	760	760	210	28.74	27.72	730	704
1100600	30x40x8	1, 12	2	29.92	39.37	8.27	760	1000	210	28.74	37.17	730	944
1057600	27x20x10	1, 3R, 4, 12	1	27.50	19.68	9.84	700	500	250	26.38	17.68	670	449
1058600	32x24x10	1, 3R, 4, 12	1	31.50	23.62	9.84	800	600	250	30.31	21.61	770	549
1090600	40x24x10	1, 3R, 4, 12	1	39.37	23.62	9.84	1000	600	250	37.60	21.61	955	549
1350600	20x20x12	1, 3R, 4, 12	1	19.69	19.69	11.81	500	500	300	18.50	17.68	470	449
1073600	30x30x12	1, 3R, 4, 12	1	29.92	29.92	11.81	760	760	300	28.74	27.72	730	704
1130600	30x40x12	1, 12	2	29.92	39.37	11.81	760	1000	300	28.74	37.17	730	944
1097500	36x30x12	1, 3R, 4, 12	1	35.43	29.92	11.81	900	760	300	33.66	27.72	855	704
1180600	40x32x12	1, 3R, 4, 12	1	39.37	31.50	11.81	1000	800	300	37.60	29.09	955	739
1110600	40x40x12	1, 12	2	39.37	39.37	11.81	1000	1000	300	37.60	36.97	955	939
1260600	47x24x12	1, 3R, 4, 12	1	47.24	23.62	11.81	1200	600	300	45.47	21.26	1155	540
1280600	47x32x12	1, 3R, 4, 12	1	47.24	31.50	11.81	1200	800	300	45.47	29.13	1155	740
1097670	47x36x12	1, 3R, 4, 12	1	47.24	35.43	11.81	1200	900	300	45.47	33.07	1155	840
1213600	47x40x12	1, 12	2	47.24	39.37	11.81	1200	1000	300	45.47	37.00	1155	940
1114600	55x40x12	1, 12	2	55.12	39.37	11.81	1400	1000	300	53.35	37.00	1355	940
1339600	15x24x14	1, 3R, 4, 12	1	14.96	23.62	13.78	380	600	350	13.98	21.61	355	549
1338600	24x15x14	1, 3R, 4, 12	1	23.62	14.96	13.78	600	380	350	22.44	21.61	570	549
1360600	24x24x14	1, 3R, 4, 12	1	23.62	23.62	13.78	600	600	350	22.44	21.61	570	549
1376600	30x24x14	1, 3R, 4, 12	1	29.92	23.62	13.78	760	600	350	28.74	21.61	730	549

Part No.	Swing frame (also order EL 2093 screws & EL 2092 nuts)	Accessories								
		Wallmounting brackets		Base		Handles			Plastic print pocket	
		3/8" standoff	1-5/8" standoff	4" high	8" high	Ergoform-S	Thumb turn	T-handle		
1032600	-	2508200	2503200	-	-	-	-	2576000	2575000	-
1035600	-	2508200	2503200	-	-	-	-	2576000	2575000	-
1030600	-	2508200	2503200	-	-	-	-	2576000	2575000	-
1033600	-	2508200	2503200	-	-	-	-	2576000	2575000	-
1031600	-	2508200	2503200	-	-	-	-	2576000	2575000	-
1380600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1039600	2026200	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1034600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1045600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1050600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1038600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1060600	2027200	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1076600	2034200	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1077600	2034200	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1100600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1057600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1058600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1090600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1350600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1073600	2034200	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1130600	-	2508200	2503200	2801200	2802200	-	-	2576000	2575000	2514000
1097500	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1180600	-	2508200	2503200	2818200	2828200	-	-	2576000	2575000	2514000
1110600	-	2508200	2503200	2801200	2802200	-	-	2576000	2575000	2514000
1260600	-	2508200	2503200	2816200	2826200	2450000	-	-	-	2514000
1280600	-	2508200	2503200	2818200	2828200	2450000	-	-	-	2514000
1097670	-	2508200	2503200	-	-	2450000	2576000	2575000	2575000	2514000
1213600	-	2508200	2503200	2801200	2802200	2450000	-	-	-	2514000
1114600	-	2508200	2503200	2801200	2802200	2450000	-	-	-	2514000
1339600	2026200	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1338600	-	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1360600	2027200	2508200	2503200	-	-	-	-	2576000	2575000	2514000
1376600	2034200	2508200	2503200	-	-	-	-	2576000	2575000	2514000

# Legacy Series Enclosures



AVAILABLE AUGUST 2001

## Carbon Steel Wallmount Boxes

Legacy Series instrument boxes offer protection for dense wiring and sensitive small electronic and electrical equipment controls and pilot devices, such as limit switches, pushbuttons, selector switches and pilot lights. Installed equipment is protected against splashing water, seepage of water, falling or hose directed water, severe external condensation and spraying of water, oil or coolant.



## Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Door opens 130°
- Knife edge flange
- Easily removable stainless steel hinge pins
- Integral channel around door provides additional stability and prevents entry of water and dirt when enclosure is opened
- Quarter turn latching
- Screwdriver lock insert
- Mounting panel provisions installed
- Mounting panel available in both white (NEMA) and zinc (full size) styles
- Grounding provisions on enclosure body and door
- Print pocket included

## Technical Specifications

### Material:

- Enclosure/door: 14 gauge carbon steel

### Finish/color:

- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces, inside and outside - ANSI 61 grey

## Protection Ratings

NEMA Type  1  4  4X  12  13

## Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

## Technical Drawings

Page .....WMT 41

Part No.	Enclosure			Latch system	Mounting Panel	
	Outside dimensions (inches)				Zinc (Full Size) Panel Part No.	White (NEMA Style) Panel Part No.
	H	W	D			
L W120806	12.00	8.00	6.00	1 Qtr. Turn	L W12P8	E 12P8
L W121206	12.00	12.00	6.00	1 Qtr. Turn	L W12P12	E 12P12
L W121608	12.00	16.00	8.00	1 Qtr. Turn	L W12P16	E 16P12
L W161206	16.00	12.00	6.00	1 Qtr. Turn	L W16P12	E 16P12
L W161208	16.00	12.00	8.00	1 Qtr. Turn	L W16P12	E 16P12
L W161606	16.00	16.00	6.00	1 Qtr. Turn	L W16P16	E 16P16
L W161608	16.00	16.00	8.00	1 Qtr. Turn	L W16P16	E 16P16
L W201606	20.00	16.00	6.00	2 Qtr. Turn	L W20P16	E 20P16
L W201608	20.00	16.00	8.00	2 Qtr. Turn	L W20P16	E 20P16
L W202008	20.00	20.00	8.00	2 Qtr. Turn	L W20P20	E 20P20
L W202012	20.00	20.00	12.00	2 Qtr. Turn	L W20P20	E 20P20
L W241608	24.00	16.00	8.00	2 Qtr. Turn	L W24P16	E 24P16
L W242008	24.00	20.00	8.00	2 Qtr. Turn	L W24P20	E 24P20
L W242408	24.00	24.00	8.00	2 Qtr. Turn	L W24P24	E 24P24
L W242412	24.00	24.00	12.00	2 Qtr. Turn	L W24P24	E 24P24
L W242416	24.00	24.00	16.00	2 Qtr. Turn	L W24P24	E 24P24
L W302408	30.00	24.00	8.00	2 Qtr. Turn	L W30P24	E 30P24
L W302412	30.00	24.00	12.00	2 Qtr. Turn	L W30P24	E 30P24
L W303008	30.00	30.00	8.00	2 Qtr. Turn	L W30P30	E 30P30
L W303012	30.00	30.00	12.00	2 Qtr. Turn	L W30P30	E 30P30
L W362408	36.00	24.00	8.00	2 Qtr. Turn	L W36P24	E 36P24
L W363012	36.00	30.00	12.00	2 Qtr. Turn	L W36P30	E 36P30
L W423212	42.00	32.00	12.00	3 Point Lock System	L W42P32	E 42P32
L W483612	48.00	36.00	12.00	3 Point Lock System	L W48P36	E 48P36
L W603612	60.00	36.00	12.00	3 Point Lock System	L W60P36	E 60P36

Part No.	Accessories				
	Terminal block kit	Terminal rails	Window kit	Touch-up paint	Wallmounting brackets
L W120806	-	-	E PWK53NF	E L21	1580000
L W121206	-	-	E PWK53NF	E L21	1580000
L W121608	-	-	E PWK53NF	E L21	1580000
L W161206	E 12NTMA2	E 16NS	E PWK95NF	E L21	1580000
L W161208	E 12NTMA2	E 16NS	E PWK95NF	E L21	1580000
L W161606	E 16NTMA2	E 16NS	E PWK95NF	E L21	1580000
L W161608	E 16NTMA2	E 16NS	E PWK95NF	E L21	1580000
L W201606	E 16NTMA2	E 20NS	E PWK138NF	E L21	1580000
L W201608	E 16NTMA2	E 20NS	E PWK138NF	E L21	1580000
L W202008	E 20NTMA2	E 20NS	E PWK138NF	E L21	1580000
L W202012	E 20NTMA2	E 20NS	E PWK138NF	E L21	1580000
L W241608	E 16NTMA2	E 24NS	E PWK175NF	E L21	1580000
L W242008	E 20NTMA2	E 24NS	E PWK1711NF	E L21	1580000
L W242408	E 24NTMA3	E 24NS	E PWK1711NF	E L21	1580000
L W242412	E 24NTMA3	E 24NS	E PWK1711NF	E L21	1580000
L W242416	E 24NTMA3	E 24NS	E PWK1711NF	E L21	1580000
L W302408	E 24NTMA3	E 30NS	E PWK2315NF	E L21	1580000
L W302412	E 24NTMA3	E 30NS	E PWK2315NF	E L21	1580000
L W303008	E 30NTMA3	E 30NS	E PWK2315NF	E L21	1580000
L W303012	E 30NTMA3	E 30NS	E PWK2315NF	E L21	1580000
L W362408	E 24NTMA3	E 36NS	E PWK2919NF	E L21	1580000
L W363012	E 30NTMA3	E 36NS	E PWK2919NF	E L21	1580000
L W423212	E 30NTMA3	E 42NS	E PWK3523NF	E L21	1580000
L W483612	E 36NTMA3	E 48NS	E PWK3523NF	E L21	1580000
L W603612	E 36NTMA3	E 60NS	E PWK3523NF	E L21	1580000



# One Door Wallmount Boxes



## NEMA 4 Carbon Steel Enclosures

These NEMA 4 rated enclosures are designed for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.



## Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous steel hinge
- Stainless steel captive clamps
- Hasp and staple provided for padlocking
- Door and body stiffeners on larger sizes
- Mounting panel provisions installed
- External mounting brackets
- Print pocket included

## Technical Specifications

- Material:**
- Enclosure/door: 14 gauge carbon steel
- Finish/color:**
- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - Optional mounting panels: painted white

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

Page .....WMT 42

Part No.	Enclosure			Part No.	Mounting Panel		
	Outside dimensions (inches)				H	W	Usable depth
	H	W	D				
E 16H12A	16.00	12.00	6.00	E 16P12	13.00	9.00	6.00
E 20H16A	20.00	16.00	6.00	E 20P16	17.00	13.00	6.00
E 20H20A	20.00	20.00	6.00	E 20P20	17.00	17.00	6.00
E 24H12A	24.00	12.00	6.00	E 24P12	21.00	9.00	6.00
E 24H16A	24.00	16.00	6.00	E 24P16	21.00	13.00	6.00
E 24H24A	24.00	24.00	6.00	E 24P24	21.00	21.00	6.00
E 16H12B	16.00	12.00	8.00	E 16P12	13.00	9.00	8.00
E 20H16B	20.00	16.00	8.00	E 20P16	17.00	13.00	8.00
E 20H20B	20.00	20.00	8.00	E 20P20	17.00	17.00	8.00
E 24H20B	24.00	20.00	8.00	E 24P20	21.00	17.00	8.00
E 24H24B	24.00	24.00	8.00	E 24P24	21.00	21.00	8.00
E 30H24B	30.00	24.00	8.00	E 30P24	27.00	21.00	8.00
E 30H30B	30.00	30.00	8.00	E 30P30	27.00	27.00	8.00
E 36H30B	36.00	30.00	8.00	E 36P30	33.00	27.00	7.37*
E 24H20C	24.00	20.00	10.00	E 24P20	21.00	17.00	10.00
E 30H24C	30.00	24.00	10.00	E 30P24	27.00	21.00	10.00
E 48H30C	48.00	30.00	10.00	E 48P30	45.00	27.00	9.37*
E 30H24D	30.00	24.00	12.00	E 30P24	27.00	21.00	12.00
E 36H30D	36.00	30.00	12.00	E 36P30	33.00	27.00	11.37*
E 48H36D	48.00	36.00	12.00	E 48P36	45.00	33.00	11.37*

Part No.	Accessories						
	Door stop kit	Drip shield kit	Terminal block kit	Terminal rails	Fast operating clamp assembly	Window kit	Touch-up paint
E 16H12A	-	E DK12NF	E 12NTMA2	E 16NS	E FOC412SS	E PWK95NF	E L21
E 20H16A	-	E DK16NF	E 16NTMA2	E 20NS	E FOC412SS	E PWK138NF	E L21
E 20H20A	-	E DK20NF	E 20NTMA2	E 20NS	E FOC412SS	E PWK138NF	E L21
E 24H12A	-	E DK12NF	E 12NTMA2	E 24NS	E FOC412SS	E PWK175NF	E L21
E 24H16A	-	E DK16NF	E 16NTMA2	E 24NS	E FOC412SS	E PWK175NF	E L21
E 24H24A	E DSTOPK	E DK24NF	E 24NTMA3	E 24NS	E FOC412SS	E PWK1711NF	E L21
E 16H12B	-	E DK12NF	E 12NTMA2	E 16NS	E FOC412SS	E PWK138NF	E L21
E 20H16B	-	E DK16NF	E 16NTMA2	E 20NS	E FOC412SS	E PWK138NF	E L21
E 20H20B	-	E DK20NF	E 20NTMA2	E 20NS	E FOC412SS	E PWK138NF	E L21
E 24H20B	-	E DK20NF	E 20NTMA2	E 24NS	E FOC412SS	E PWK1711NF	E L21
E 24H24B	E DSTOPK	E DK24NF	E 24NTMA3	E 24NS	E FOC412SS	E PWK1711NF	E L21
E 30H24B	E DSTOPK	E DK24NF	E 24NTMA3	E 30NS	E FOC412SS	E PWK2315NF	E L21
E 30H30B	E DSTOPK	E DK30NF	E 30NTMA3	E 30NS	E FOC412SS	E PWK2315NF	E L21
E 36H30B	E DSTOPK	E DK30NF	E 30NTMA3	E 36NS	E FOC412SS	E PWK2919NF	E L21
E 24H20C	-	E DK20NF	E 20NTMA2	E 24NS	E FOC412SS	E PWK1711NF	E L21
E 30H24C	E DSTOPK	E DK24NF	E 24NTMA3	E 30NS	E FOC412SS	E PWK2315NF	E L21
E 48H30C	E DSTOPK	E DK30NF	E 30NTMA3	E 48NS	E FOC412SS	E PWK3523NF	E L21
E 30H24D	E DSTOPK	E DK24NF	E 24NTMA3	E 30NS	E FOC412SS	E PWK2315NF	E L21
E 36H30D	E DSTOPK	E DK30NF	E 30NTMA3	E 36NS	E FOC412SS	E PWK2919NF	E L21
E 48H36D	E DSTOPK	E DK36NF	E 36NTMA3	E 48NS	E FOC412SS	E PWK3523NF	E L21

# One Door Wallmount Enclosures



## Carbon Steel Electromate Boxes

These NEMA rated enclosures are designed for indoor use to protect enclosed equipment against lint and dust, external condensation, and spraying of water, oil or coolant.



### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous hinge with removable pin
- Plated steel captive clamps
- Hasp and staple for padlocking
- Door and body stiffeners in larger sizes
- Mounting panel provisions installed
- External mounting brackets
- Print pocket included

### Technical Specifications

- Material:**
- Enclosure/door: 14 gauge carbon steel
- Finish/color:**
- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces,
    - inside: see table
    - outside: ANSI 61 grey
  - Optional mounting panels: painted white

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Pages** .....WMT 43-44

Part No.	Enclosure			Part No.	Mounting Panel			
	Outside dimensions (inches)				H	W	Usable depth	Inside paint color
	H	W	D					
E 161206	16.00	12.00	6.00	E 16P12	13.00	9.00	6.00	WHITE
E 161606	16.00	16.00	6.00	E 16P16	13.00	13.00	6.00	GREY
E 201606	20.00	16.00	6.00	E 20P16	17.00	13.00	6.00	GREY
E 202006	20.00	20.00	6.00	E 20P20	17.00	17.00	6.00	GREY
E 241206	24.00	12.00	6.00	E 24P12	21.00	9.00	6.00	WHITE
E 241606	24.00	16.00	6.00	E 24P16	21.00	13.00	6.00	WHITE
E 242006	24.00	20.00	6.00	E 24P20	21.00	17.00	6.00	WHITE
E 242406	24.00	24.00	6.00	E 24P24	21.00	21.00	6.00	WHITE
E 161208	16.00	12.00	8.00	E 16P12	13.00	9.00	8.00	GREY
E 161608	16.00	16.00	8.00	E 16P16	13.00	13.00	8.00	GREY
E 162008	16.00	20.00	8.00	E 20P16	13.00	17.00	8.00	GREY
E 201608	20.00	16.00	8.00	E 20P16	17.00	13.00	8.00	GREY
E 202008	20.00	20.00	8.00	E 20P20	17.00	17.00	8.00	GREY
E 202408	20.00	24.00	8.00	E 24P20	17.00	21.00	8.00	WHITE
E 241208	24.00	12.00	8.00	E 24P12	21.00	9.00	8.00	WHITE
E 241608	24.00	16.00	8.00	E 24P16	21.00	13.00	8.00	WHITE
E 242008	24.00	20.00	8.00	E 24P20	21.00	17.00	8.00	WHITE
E 242408	24.00	24.00	8.00	E 24P24	21.00	21.00	8.00	WHITE
E 243008	24.00	30.00	8.00	E 30P24	21.00	27.00	8.00	WHITE
E 302008	30.00	20.00	8.00	E 30P20	27.00	17.00	8.00	WHITE
E 302408	30.00	24.00	8.00	E 30P24	27.00	21.00	8.00	WHITE
E 303008	30.00	30.00	8.00	E 30P30	27.00	27.00	8.00	WHITE
E 303608	30.00	36.00	8.00	E 36P30	27.00	33.00	8.00	WHITE
E 362408	36.00	24.00	8.00	E 36P24	33.00	21.00	8.00	WHITE
E 363008	36.00	30.00	8.00	E 36P30	33.00	27.00	7.37*	WHITE
E 363608	36.00	36.00	8.00	E 36P36	33.00	33.00	7.37*	WHITE

\* Usable depth reduced by .625" at door stiffener.

(Chart continued on page WMT 23).

Part No.	Accessories				
	Door stop kit	Drip shield kit	Terminal blocks	Terminal rails	Touch-up paint
E 161206	-	E DK12	E 12NTMA2	E 16NS	E L21
E 161606	-	E DK16	E 16NTMA2	E 16NS	E L21
E 201606	-	E DK16	E 16NTMA2	E 20NS	E L21
E 202006	-	E DK20	E 20NTMA2	E 20NS	E L21
E 241206	-	E DK12	E 12NTMA2	E 24NS	E L21
E 241606	-	E DK16	E 16NTMA2	E 24NS	E L21
E 242006	-	E DK20	E 20NTMA2	E 24NS	E L21
E 242406	E DSTOPK	E DK24	E 24NTMA3	E 24NS	E L21
E 161208	-	E DK12	E 12NTMA2	E 16NS	E L21
E 161608	-	E DK16	E 16NTMA2	E 16NS	E L21
E 162008	-	E DK20	E 20NTMA2	E 16NS	E L21
E 201608	-	E DK16	E 16NTMA2	E 20NS	E L21
E 202008	-	E DK20	E 20NTMA2	E 20NS	E L21
E 202408	E DSTOPK	E DK24	E 24NTMA3	E 20NS	E L21
E 241208	-	E DK12	E 12NTMA2	E 24NS	E L21
E 241608	-	E DK16	E 16NTMA2	E 24NS	E L21
E 242008	-	E DK20	E 20NTMA2	E 24NS	E L21
E 242408	E DSTOPK	E DK24	E 24NTMA3	E 24NS	E L21
E 243008	E DSTOPK	E DK30	E 30NTMA3	E 24NS	E L21
E 302008	-	E DK20	E 20NTMA2	E 30NS	E L21
E 302408	E DSTOPK	E DK24	E 24NTMA3	E 30NS	E L21
E 303008	E DSTOPK	E DK30	E 30NTMA3	E 30NS	E L21
E 303608	E DSTOPK	E DK36	E 36NTMA3	E 30NS	E L21
E 362408	E DSTOPK	E DK24	E 24NTMA3	E 36NS	E L21
E 363008	E DSTOPK	E DK30	E 30NTMA3	E 36NS	E L21
E 363608	E DSTOPK	E DK36	E 36NTMA3	E 36NS	E L21

(Chart continued on page WMT 24).



Enclosure (Continued)				Mounting Panel (Continued)				
Part No.	Outside dimensions (inches)			Part No.	H	W	Usable depth	Inside paint color
	H	W	D					
E 483608	48.00	36.00	8.00	E 48P36	45.00	33.00	7.37*	WHITE
E 161210	16.00	12.00	10.00	E 16P12	13.00	9.00	10.00	GREY
E 201610	20.00	16.00	10.00	E 20P16	17.00	13.00	10.00	GREY
E 202010	20.00	20.00	10.00	E 20P20	17.00	17.00	10.00	GREY
E 242010	24.00	20.00	10.00	E 24P20	21.00	17.00	10.00	WHITE
E 242410	24.00	24.00	10.00	E 24P24	21.00	21.00	10.00	WHITE
E 302010	30.00	20.00	10.00	E 30P20	27.00	17.00	10.00	WHITE
E 302410	30.00	24.00	10.00	E 30P24	27.00	21.00	10.00	WHITE
E 362410	36.00	24.00	10.00	E 36P24	33.00	21.00	10.00	WHITE
E 363010	36.00	30.00	10.00	E 36P30	33.00	27.00	9.37*	WHITE
E 423610	42.00	36.00	10.00	E 42P36	39.00	33.00	9.37*	WHITE
E 483610	48.00	36.00	10.00	E 48P36	45.00	33.00	9.37*	WHITE
E 603610	60.00	36.00	10.00	E 60P36	57.00	33.00	9.37*	WHITE
E 201612	20.00	16.00	12.00	E 20P16	17.00	13.00	12.00	GREY
E 242012	24.00	20.00	12.00	E 24P20	21.00	17.00	12.00	WHITE
E 242412	24.00	24.00	12.00	E 24P24	21.00	21.00	12.00	WHITE
E 302412	30.00	24.00	12.00	E 30P24	27.00	21.00	12.00	WHITE
E 303012	30.00	30.00	12.00	E 30P30	27.00	27.00	12.00	WHITE
E 362412	36.00	24.00	12.00	E 36P24	33.00	21.00	12.00	WHITE
E 363012	36.00	30.00	12.00	E 36P30	33.00	27.00	11.37*	WHITE
E 363612	36.00	36.00	12.00	E 36P36	33.00	33.00	11.37*	WHITE
E 423612	42.00	36.00	12.00	E 42P36	39.00	33.00	11.37*	WHITE
E 483612	48.00	36.00	12.00	E 48P36	45.00	33.00	11.37*	WHITE
E 603612	60.00	36.00	12.00	E 60P36	57.00	33.00	11.37*	WHITE
E 363016	36.00	30.00	16.00	E 36P30	33.00	27.00	15.37*	WHITE
E 603616	60.00	36.00	16.00	E 60P36	57.00	33.00	15.37*	WHITE
E 302420	30.00	24.00	20.00	E 30P24	27.00	21.00	20.00	WHITE

\* Usable depth reduced by .625" at door stiffener.



Accessories (Continued)					
Part No.	Door stop kit	Drip shield kit	Terminal block kit	Terminal rails	Touch-up paint
E 483608	E DSTOPK	E DK36	E 36NTMA3	E 48NS	E L21
E 161210	-	E DK12	E 12NTMA2	E 16NS	E L21
E 201610	-	E DK16	E 16NTMA2	E 20NS	E L21
E 202010	-	E DK20	E 20NTMA2	E 20NS	E L21
E 242010	-	E DK20	E 20NTMA2	E 24NS	E L21
E 242410	E DKSTOPK	E DK24	E 24NTMA3	E 24NS	E L21
E 302010	-	E DK20	E 20NTMA2	E 30NS	E L21
E 302410	E DSTOPK	E DK24	E 24NTMA3	E 30NS	E L21
E 362410	E DSTOPK	E DK24	E 24NTMA3	E 36NS	E L21
E 363010	E DSTOPK	E DK30	E 30NTMA3	E 36NS	E L21
E 423610	E DSTOPK	E DK36	E 36NTMA3	E 42NS	E L21
E 483610	E DSTOPK	E DK36	E 36NTMA3	E 48NS	E L21
E 603610	E DSTOPK	E DK36	E 36NTMA3	E 60NS	E L21
E 201612	-	E DK16	E 16NTMA2	E 20NS	E L21
E 242012	-	E DK20	E 20NTMA2	E 24NS	E L21
E 242412	E DSTOPK	E DK24	E 24NTMA3	E 24NS	E L21
E 302412	E DSTOPK	E DK24	E 24NTMA3	E 30NS	E L21
E 303012	E DSTOPK	E DK30	E 30NTMA3	E 30NS	E L21
E 362412	E DSTOPK	E DK24	E 24NTMA3	E 36NS	E L21
E 363012	E DSTOPK	E DK30	E 30NTMA3	E 36NS	E L21
E 363612	E DSTOPK	E DK36	E 36NTMA3	E 36NS	E L21
E 423612	E DSTOPK	E DK36	E 36NTMA3	E 42NS	E L21
E 483612	E DSTOPK	E DK36	E 36MTMA3	E 48NS	E L21
E 603612	E DSTOPK	E DK36	E 36NTMA3	E 60NS	E L21
E 363016	E DSTOPK	E DK30	E 30NTMA3	E 36NS	E L21
E 603616	E DSTOPK	E DK36	E 36NTMA3	E 60NS	E L21
E 302420	E DSTOPK	E DK24	E 24NTMA3	E 30NS	E L21



# EL 3-Part Wallmount Enclosures



## NEMA Rated Wallmount Enclosures

Rittal's three part wallmount enclosures provide a perfect solution for packaging and protecting electronic equipment, even under extreme conditions. Its versatile design offers integral 19" rails for direct mounting of 19" rackmount equipment.

In addition to its attractive design, this cabinet features easy assembly and installation, problem-free operation, and a NEMA 12 protection rating.

A swing frame lock, which is not accessible until after the front door has been opened, provides limited access for security purposes.

## Configuration

- NEMA 1, 12/IP 55 protection
- UL/CSA approvals
- Swing-out mid-section provides easy access to components
- Maximum stability through folded 16 ga steel construction
- Lockable front door
- Viewing window provides easy visibility of components
- Large, removable cable gland panels
- Adjustable 19° angles allow flexible space utilization
- Patented mounting system provides efficient space use
- E-coat primer and powder paint provide superior corrosion protection
- Knife-edge design protects against liquid entry
- Integrated grounding provisions
- Rear mounting holes allow direct wallmounting or the use of optional mounting feet

## Technical Specifications

### Material:

- *Rear section module and mid-section:* 16 ga/1.5 mm sheet steel
- *Front door:* extruded aluminum with diecast aluminum corner pieces; .16"/4 mm security glass

### Finish:

- *Enclosure:* E-coat primed, textured, RAL 7032 pebble grey
- *Front door:* textured, RAL 7033 mortar grey

## Protection Ratings

NEMA Type  1  4  4X  12  13

## Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

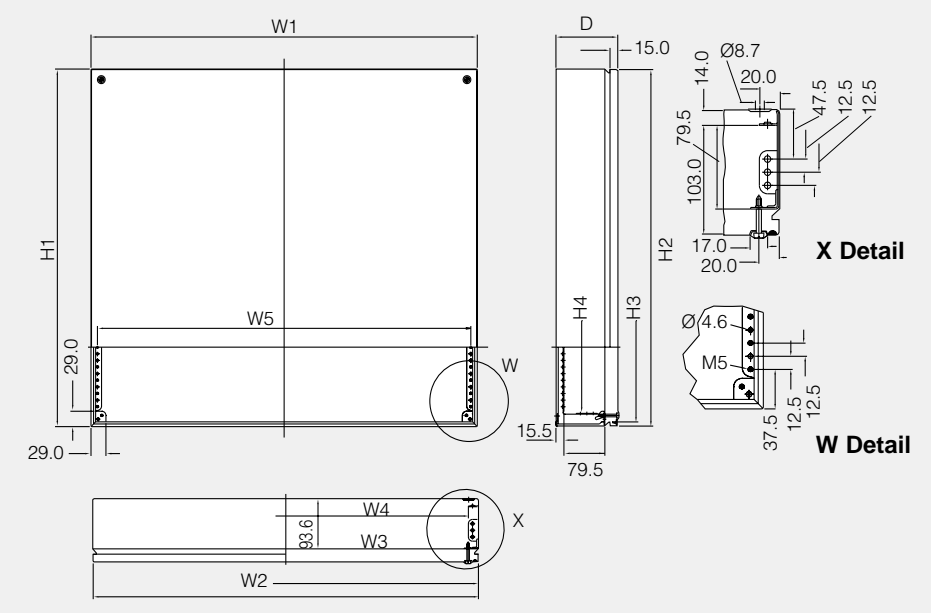
## Technical Drawings

Page .....WMT 45

Enclosure											
Part No.	Usable rack space 1U=1.75"	Approximate outside dimensions H"xW"xD"	NEMA rating	Exact outside dimensions						Max. equipment depth	
				inches			mm			inches	mm
				H	W	D	H	W	D	D	D
7706024	6	14x24x24	1, 12	13.58	23.62	23.62	345	600	600	14.17	360
7709024	9	19x24x24	1, 12	18.82	23.62	23.62	478	600	600	18.11	460
7712024	12	24x24x24	1, 12	24.09	23.62	23.62	612	600	600	18.11	460
7715024	15	29x24x24	1, 12	29.37	23.62	23.62	746	600	600	18.11	460
7718024	18	35x24x24	1, 12	34.57	23.62	23.62	878	600	600	18.11	460
7721024	21	40x24x24	1, 12	39.84	23.62	23.62	1012	600	600	18.11	460

Accessories									
Part No.	Wallmount brackets		Handle Mini Ergoform-S	Lock inserts for Mini Ergoform-S push/lock	C-rail	Slide rails	19" rack captive nuts	Captive nut screws	Rackmount shelf
	3/8" standoff	1-1/2" standoff							
	7706024	2508200							
7709024	2508200	2503200	2242000	2469000	2239000	2250000	2092200	2093200	7148000
7712024	2508200	2503200	2242000	2469000	2239000	2250000	2092200	2093200	7148000
7715024	2508200	2503200	2242000	2469000	2239000	2250000	2092200	2093200	7148000
7718024	2508200	2503200	2242000	2469000	2239000	2250000	2092200	2093200	7148000
7721024	2508200	2503200	2242000	2469000	2239000	2250000	2092200	2093200	7148000

**Technical Specifications**  
KL Junction Boxes Without Gland Panels



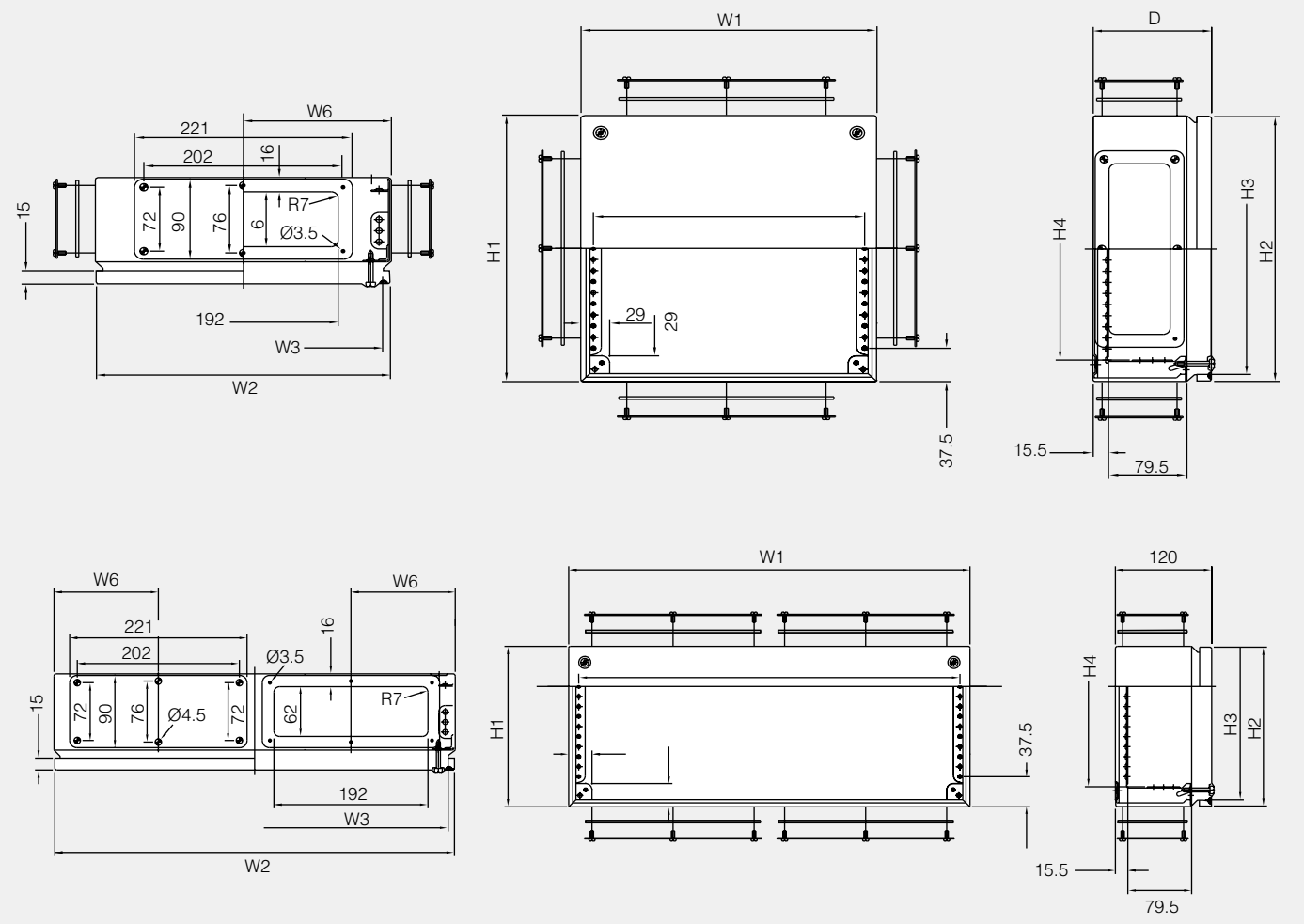
**KL Junction Boxes Without Gland Panels, 3.15"/80 mm Deep**

Part No.	Exact outside dimensions						H2	H3	H4	W2	W3	W4	W5	Weight	
	H (H1)		W (W1)		D (D)									lbs	kg
	inches	mm	inches	mm	inches	mm									
<b>1514210</b>	5.91	150	5.91	150	3.15	80	148	132	100	148	132	109	125	3.1	1.4
<b>1515210</b>	5.91	150	11.81	300	3.15	80	148	132	100	298	282	259	275	4.6	2.1
<b>1517210</b>	7.87	200	11.81	300	3.15	80	198	182	150	298	282	259	275	5.7	2.6

**KL Junction Boxes Without Gland Panels, 4.72"/120 mm Deep**

Part No.	Exact outside dimensions						H2	H3	H4	W2	W3	W4	W5	Weight	
	H (H1)		W (W1)		D (D)									lbs	kg
	inches	mm	inches	mm	inches	mm									
<b>1500210</b>	5.91	150	5.91	150	4.72	120	148	132	100	148	132	109	125	3.5	1.6
<b>1501210</b>	5.91	150	11.81	300	4.72	120	148	132	100	298	282	259	275	5.5	2.5
<b>1502210</b>	7.87	200	7.87	200	4.72	120	198	182	150	198	182	159	175	5.1	2.3
<b>1503210</b>	7.87	200	11.81	300	4.72	120	198	182	150	298	282	259	275	6.8	3.1
<b>1504210</b>	7.87	200	15.75	400	4.72	120	198	182	150	398	382	359	375	8.6	3.9
<b>1505210</b>	7.87	200	19.69	500	4.72	120	198	182	150	498	482	459	475	9.9	4.5
<b>1507210</b>	11.81	300	11.81	300	4.72	120	298	282	250	298	282	259	275	9.3	4.2
<b>1508210</b>	11.81	300	15.75	400	4.72	120	298	282	250	398	382	359	375	11.0	5.0
<b>1509210</b>	11.81	300	19.69	500	4.72	120	298	282	250	498	482	459	475	13.2	6.0
<b>1511210</b>	15.75	400	15.75	400	4.72	120	398	382	350	398	382	359	375	13.7	6.2

**Technical Specifications**  
KL Junction Boxes With Gland Panels



**KL Junction Boxes With Gland Panels**

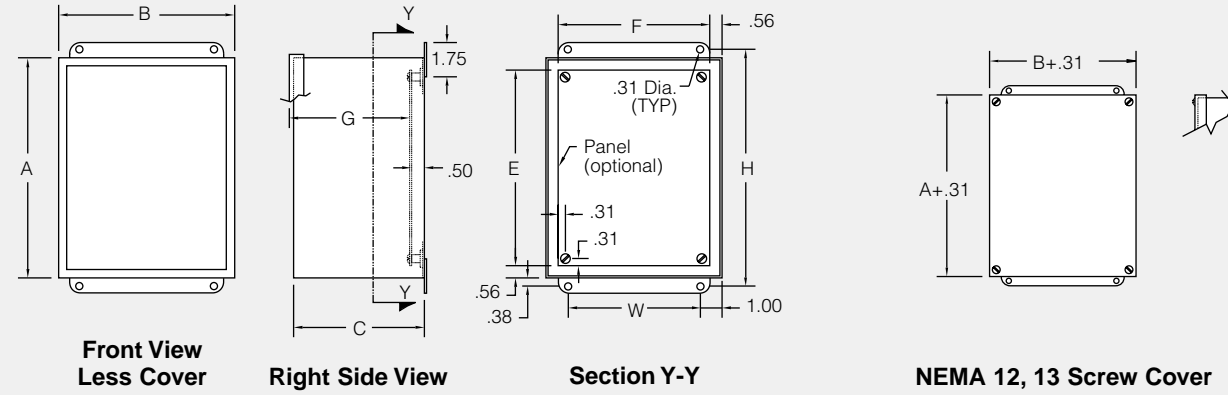
Part No.	Exact outside dimensions						H2	H3	H4	W2	W3	W5	W6	Weight	
	H (H1)		W (W1)		D (D)									lbs	kg
	inches	mm	inches	mm	inches	mm									
<b>1530210</b>	5.91	150	11.81	300	4.72	120	148	132	100	298	282	275	150	5.9	2.7
<b>1531210</b>	7.87	200	11.81	300	4.72	120	198	182	150	298	282	275	150	7.3	3.3

**KL Junction Boxes With Gland Panels (Continued)**

Part No.	Cover screws	Total no. of glands	No. of glands horizontal	No. of glands vertical
<b>1530210</b>	4	2	1	-
<b>1531210</b>	4	2	1	-

Dimensions in millimeters (mm) unless otherwise indicated.

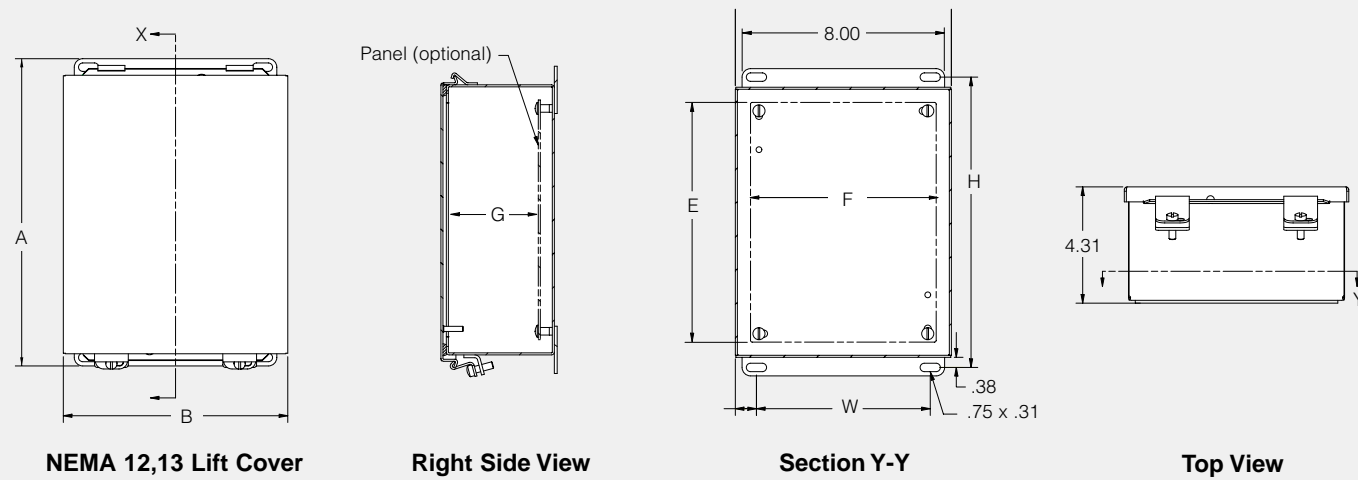
**Technical Specifications**  
Screw Cover Junction Boxes



Part No.	Enclosure			Mounting centers		Part No.	Panel size		Usable depth
	Outside dimensions (inches)			H	W		Panel size		
	H	W	D				E	F	
E 404SC*	4.00	4.00	3.00	4.75	2.00	NONE	-	-	-
E 604SC*	6.00	4.00	3.00	6.75	2.00	E 6P4	4.88	2.88	2.50
E 806SC	8.00	6.00	3.50	8.75	4.00	E 8P6	6.88	4.88	3.00
E 6044SC*	6.00	4.00	4.00	6.75	2.00	E 6P4	4.88	2.88	3.50
E 606SC*	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50
E 1008SC	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50
E 1210SC	12.00	10.00	5.00	12.75	8.00	E 12P10	10.88	8.88	3.50
E 8066SC	8.00	6.00	6.00	8.75	4.00	E 8P6	6.88	4.88	5.50
E 1212SC	12.00	12.00	6.00	12.75	10.00	E 12P12	10.88	10.88	5.50
E 1412SC	14.00	12.00	6.00	14.75	10.00	E 14P12	12.88	10.88	5.50

\* 16 gauge

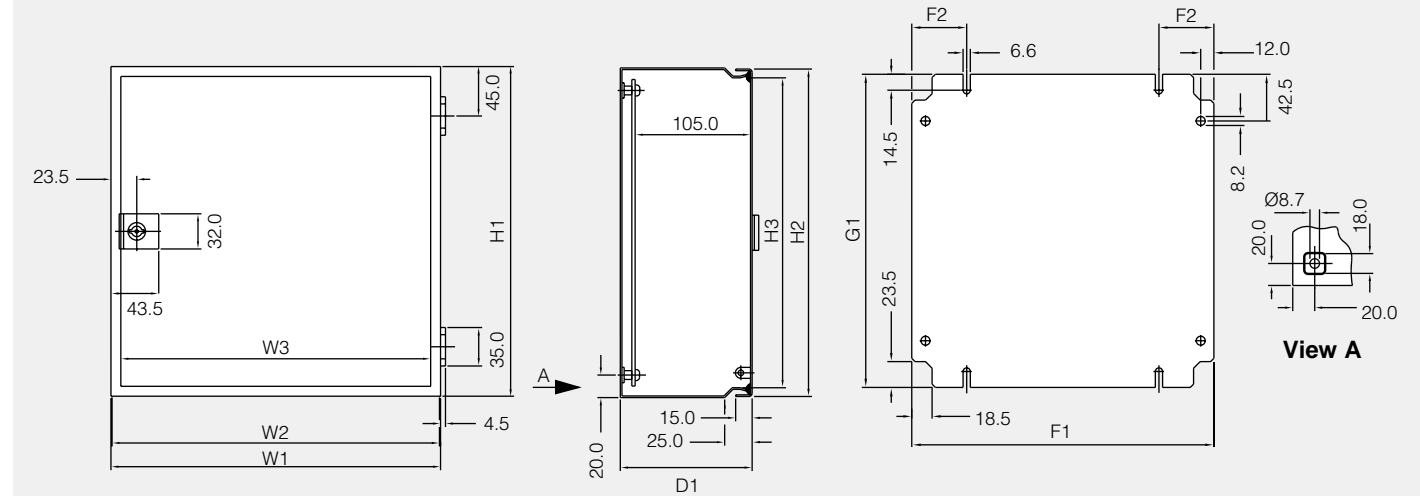
**Lift-Off Hinge Cover Boxes**



Part No.	Enclosure			Mounting centers		Part No.	Panel size		Usable depth
	Outside dimensions (inches)			H	W		Panel size		
	Height	Width	Depth				E	F	
E 404LP*	4.00	4.00	3.00	4.75	2.00	NONE	-	-	-
E 604LP*	6.00	4.00	3.00	6.75	2.00	E 6P4	4.88	2.88	2.50
E 806LP	8.00	6.00	3.50	8.75	4.00	E 8P6	6.88	4.88	3.00
E 6044LP*	6.00	4.00	4.00	6.75	2.00	E 6P4	4.88	2.88	3.50
E 606LP*	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50
E 1008LP	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50
E 1412LP	14.00	12.00	6.00	14.75	10.00	E 14P12	12.88	10.88	5.50

\* 16 gauge

**Technical Specifications**  
EB Instrument Enclosures



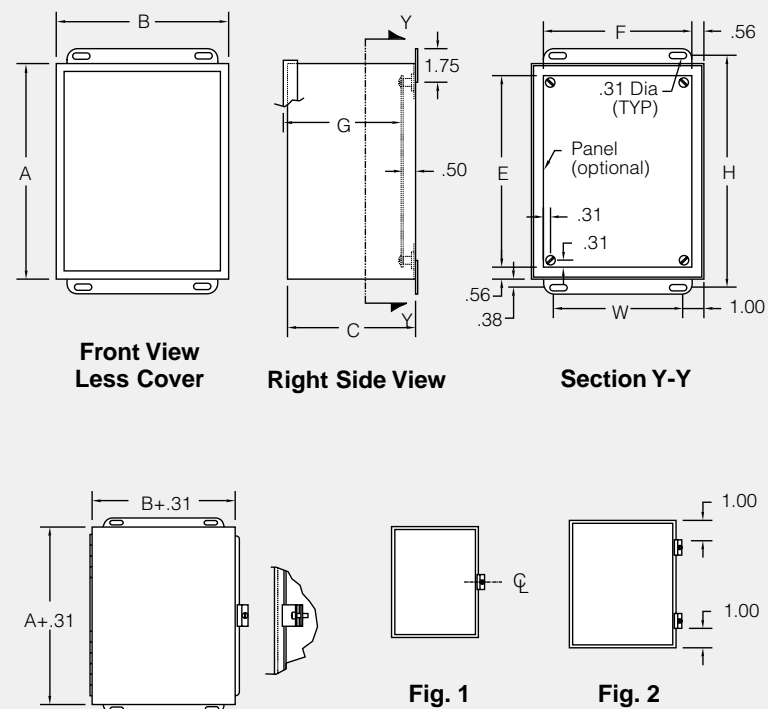
Part No.	Enclosure										Weight		Mounting panel standard equipment		
	H1		W1		D		H2	H3	W2	W3	lbs	kg	F1	F2	G1
	inches	mm	inches	mm	inches	mm									
1551600	5.91	150	5.91	150	3.15	80	148	132	148	132	3.7	1.7	125	62.5	135
1553600	5.91	150	5.91	150	4.72	120	148	132	148	132	4.4	2.0	125	62.5	135
1751600	7.87	200	5.91	150	4.72	120	198	182	148	132	5.3	2.4	125	65	185
1549600	7.87	200	7.87	200	4.72	120	198	182	198	182	6.2	2.8	175	50	185
1554600	11.81	300	7.87	200	4.72	120	298	282	198	182	7.9	3.6	175	50	285
1556600	11.81	300	11.81	300	4.72	120	298	282	298	282	11.0	5.0	275	50	285
1752600	9.84	250	7.87	200	6.10	155	248	232	198	182	7.9	3.6	175	50	235
1753600	11.81	300	9.84	250	6.10	155	298	282	248	232	11.0	5.0	225	50	285
1754600	13.78	350	11.81	300	6.10	155	348	332	298	282	12.8	5.8	275	50	335
1755600	15.75	400	13.78	350	6.10	155	398	382	348	332	13.7	6.2	325	50	385
1578600	23.62	600	11.81	300	6.10	155	598	582	298	282	18.3	8.3	275	50	585

Dimensions in millimeters (mm) unless otherwise indicated.



### Technical Specifications

#### Continuous Hinge Cover Enclosures

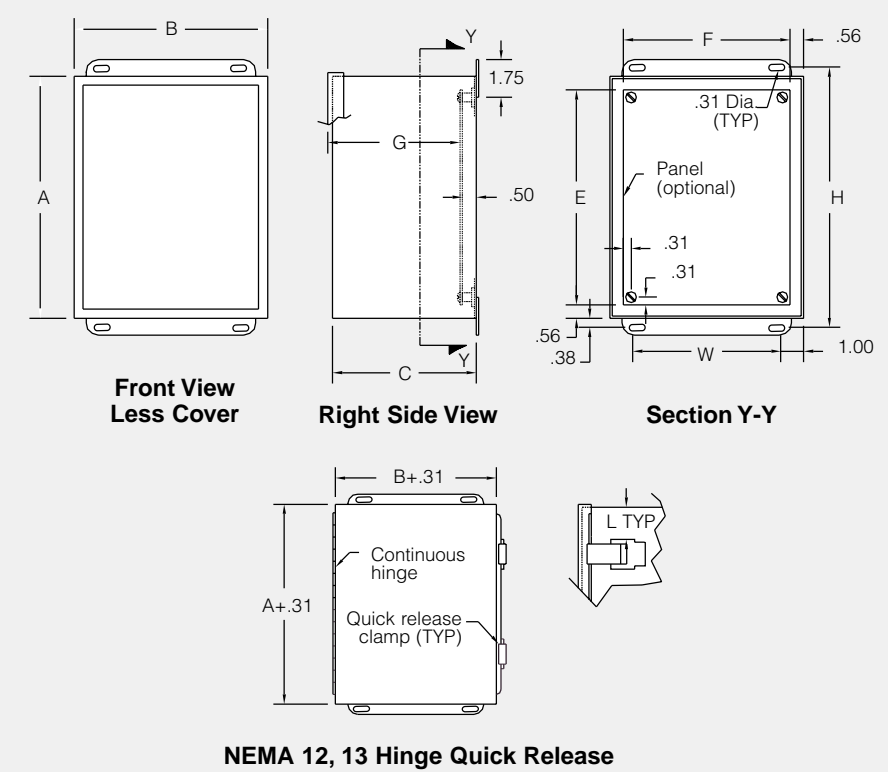


Part No.	Enclosure			Mounting Panel			Part No.	Panel size		Usable depth	Clamps
	Outside dimensions (inches)			Mounting centers		E		F	G		
	H	W	D	H	W						
E 404CH*	4.00	4.00	3.00	4.75	2.00	NONE	-	-	-	-	-
E 604CH*	6.00	4.00	3.00	6.75	2.00	E 6P4	4.88	2.88	2.50	Fig. 1	
E 806CH	8.00	6.00	3.50	8.75	4.00	E 8P6	6.88	4.88	3.00	Fig. 2	
E 6044CH*	6.00	4.00	4.00	6.75	2.00	E 6P4	4.88	2.88	3.50	Fig. 1	
E 606CH*	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50	Fig. 1	
E 808CH	8.00	8.00	4.00	8.75	6.00	E 8P8	6.88	6.88	3.50	Fig. 2	
E 1008CH	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50	Fig. 2	
E 12064CH	12.00	6.00	4.00	12.75	4.00	E 12P6	10.88	4.88	3.50	Fig. 2	
E 1210CH	10.00	10.00	5.00	10.75	8.00	E 10P10	8.88	8.88	4.50	Fig. 2	
E 8066CH	8.00	6.00	6.00	8.75	4.00	E 18P6	6.88	4.88	5.50	Fig. 2	
E 10086CH	10.00	8.00	6.00	10.75	6.00	E 10P8	8.88	6.88	5.50	Fig. 2	
E 10106CH	10.00	10.00	6.00	10.75	8.00	E 10P10	8.88	8.88	5.50	Fig. 2	
E 1212CH	12.00	12.00	6.00	12.75	10.00	E 12P12	10.88	10.88	5.50	Fig. 2	
E 1412CH	14.00	12.00	6.00	14.75	10.00	E 14P12	12.88	10.88	5.50	Fig. 2	
E 1614CH	16.00	14.00	6.00	16.75	12.00	E 16P14	14.88	12.88	5.50	Fig. 2	
E 12108CH	12.00	10.00	8.00	12.75	8.00	E 12P10	10.88	8.88	7.50	Fig. 2	
E 14128CH	14.00	12.00	8.00	14.75	10.00	E 14P12	12.88	10.88	7.50	Fig. 2	
E 16148CH	16.00	14.00	8.00	16.75	12.00	E 16P14	14.88	12.88	7.50	Fig. 2	
E 161410CH	16.00	14.00	10.00	16.75	12.00	E 16P14	14.88	12.88	9.50	Fig. 2	

\* 16 gauge

### Technical Specifications

#### Continuous Hinge Quick Release Boxes

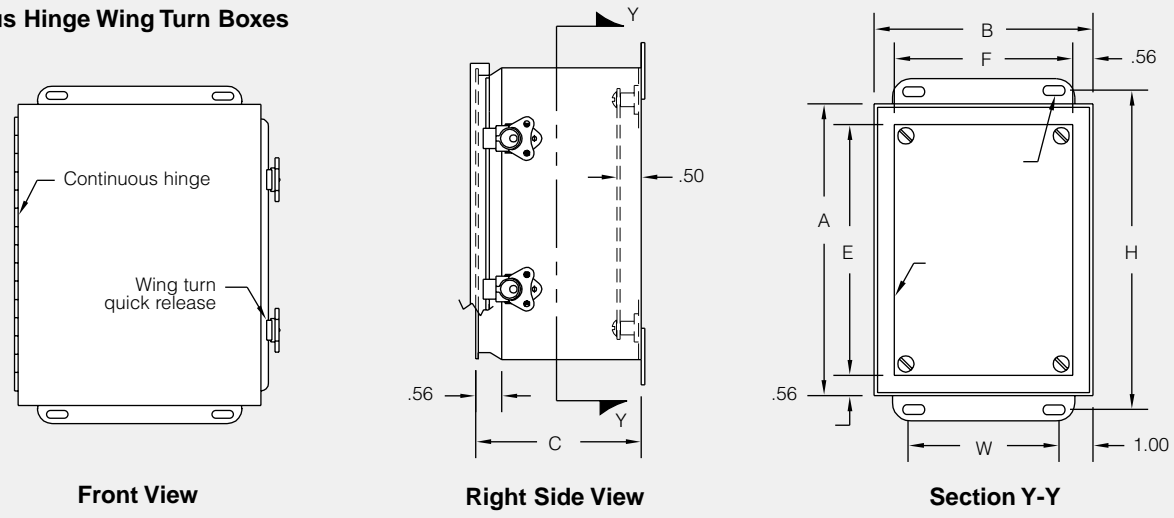


NEMA 12, 13 Hinge Quick Release

Part No.	Enclosure			Mounting Panel			Part No.	Panel size		Usable depth	Clamps
	Outside dimensions (inches)			Mounting centers		E		F	G		
	H	W	D	H	W						
E 404CHQR*	4.00	4.00	3.00	4.75	2.00	NONE	-	-	-	Fig. 1	
E 604CHQR*	6.00	4.00	3.00	6.75	2.00	E 6P4	4.88	2.88	2.50	Fig. 1	
E 806CHQR	8.00	6.00	3.50	8.75	4.00	E 8P6	6.88	4.88	3.00	Fig. 1	
E 606CHQR*	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50	Fig. 1	
E 1008CHQR	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50	Fig. 2	
E 1210CHQR	12.00	10.00	5.00	12.75	8.00	E 12P10	10.88	8.88	4.50	Fig. 3	
E 1412CHQR	14.00	12.00	6.00	14.75	10.00	E 14P12	12.88	10.88	5.50	Fig. 3	
E 1614CHQR	16.00	14.00	6.00	16.75	12.00	E 16P14	14.88	12.88	5.50	Fig. 4	

\* 16 gauge

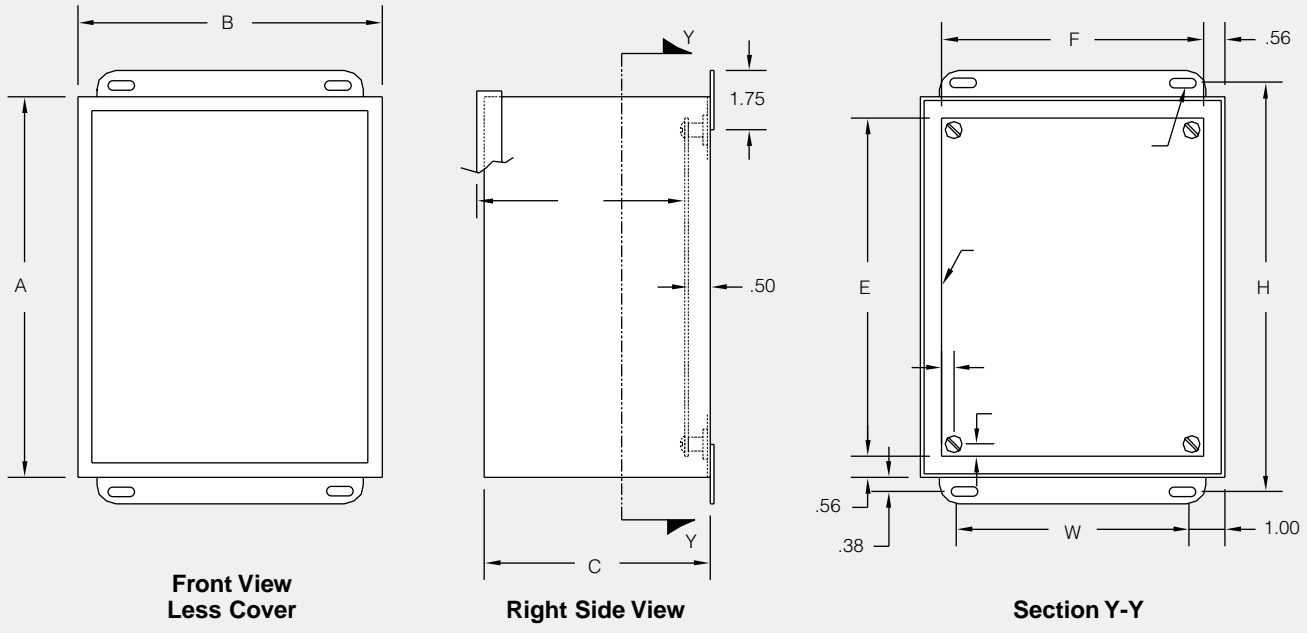
**Technical Specifications**  
Continuous Hinge Wing Turn Boxes



Enclosure				Mounting Panel					
Part No.	Outside dimensions (inches)			Mountings centers		Part No.	Panel size		Usable depth
	H	W	D	H	W		E	F	
E 604CHWL*	6.00	4.00	4.48	6.75	2.00	E 6P4	4.75	2.88	4.04
E 806CHWL	8.00	6.00	4.48	8.75	4.00	E 8P6	6.75	4.88	4.04
E 1008CHWL	10.00	8.00	4.48	10.75	6.00	E 10P8	8.75	6.88	4.04
E 1210CHWL	12.00	10.00	5.48	12.75	8.00	E 12P10	10.75	8.88	5.04
E 1412CHWL	14.00	12.00	6.48	14.75	10.00	E 14P12	12.75	10.88	6.04
E 1614CHWL	16.00	14.00	6.48	16.75	12.00	E 16P14	14.75	12.88	6.04

\* 16 gauge

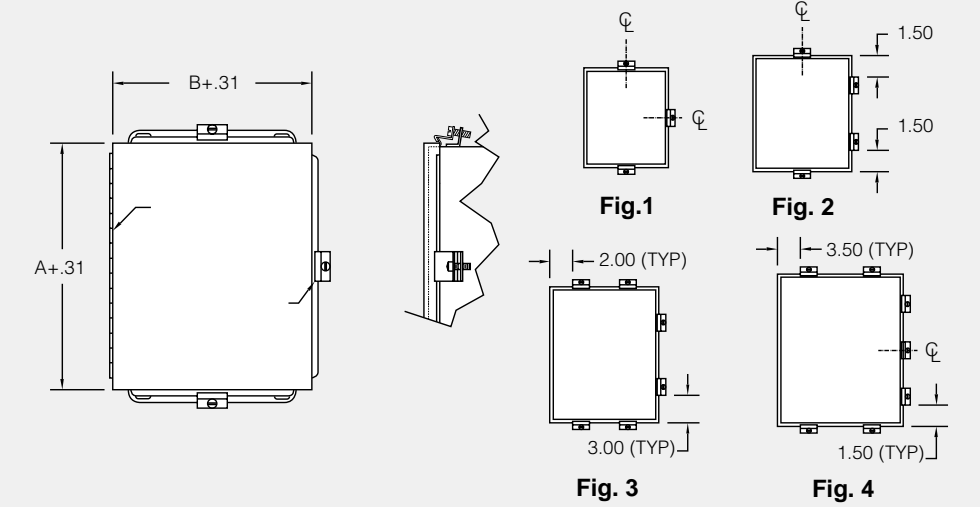
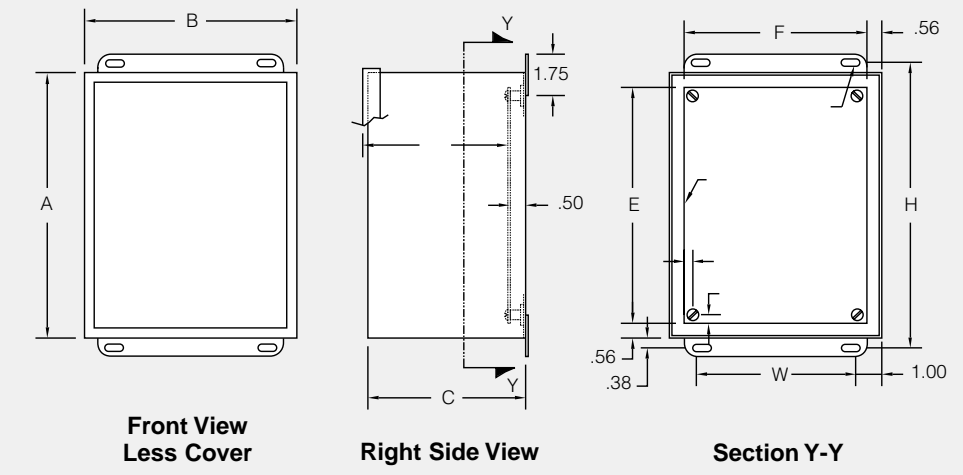
**Clamp Cover Junction Enclosures**



Enclosure				Mounting Panel						
Part No.	Outside dimensions (inches)			Mounting centers		Part No.	Panel size		Usable depth	Clamps
	H	W	D	H	W		E	F		
E 404NF*	4.00	4.00	3.00	4.75	2.00	NONE	-	-	-	Fig. 1
E 806NF	8.00	6.00	4.00	8.75	4.00	E 8P6	6.88	4.88	3.50	Fig. 1
E 606NF*	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50	Fig. 1
E 1210NF	12.00	10.00	5.00	12.75	8.00	E 12P10	10.88	8.88	4.50	Fig. 3
E 1614NF	16.00	14.00	6.00	16.75	12.00	E 16P14	14.88	12.88	5.50	Fig. 4

\* 16 gauge

**Technical Specifications**  
Continuous Hinge Cover Boxes

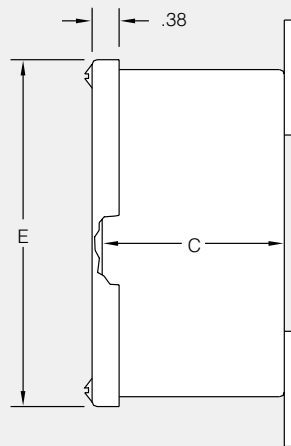
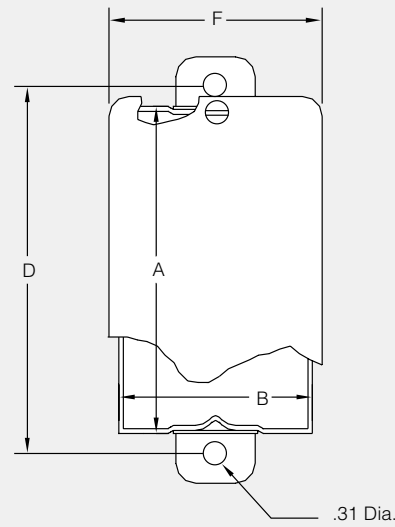


Enclosure				Mounting Panel						
Part No.	Outside dimensions (inches)			Mounting centers		Part No.	Panel size		Usable depth	Clamps
	Height	Width	Depth	H	W		E	F		
E 404CHNF*	4.00	4.00	3.00	4.75	2.00	NONE	-	-	-	Fig. 1
E 604CHNF*	6.00	4.00	3.00	6.75	2.00	E 6P4	4.88	2.88	2.50	Fig. 1
E 806CHNF	8.00	6.00	3.50	8.75	4.00	E 8P6	6.88	4.88	3.00	Fig. 1
E 606CHNF*	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50	Fig. 1
E 1008CHNF	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50	Fig. 2
E 1210CHNF	12.00	10.00	5.00	12.75	8.00	E 12P10	10.88	8.88	4.50	Fig. 3
E 10086CHNF	10.00	8.00	6.00	10.75	6.00	E 10P8	8.88	6.88	5.50	Fig. 2
E 1212CHNF	12.00	12.00	6.00	12.75	10.00	E 12P12	10.88	10.88	5.50	Fig. 3
E 1412CHNF	14.00	12.00	6.00	14.75	10.00	E 14P12	12.88	10.88	5.50	Fig. 3
E 1614CHNF	16.00	14.00	6.00	16.75	12.00	E 16P14	14.88	12.88	5.50	Fig. 4

\* 16 gauge

### Technical Specifications

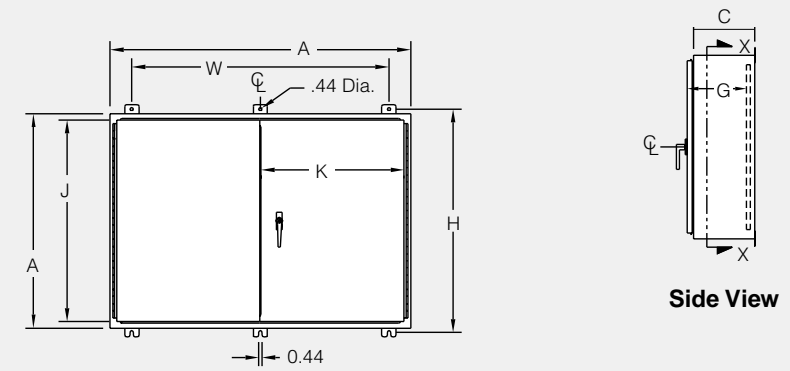
#### Handy Box Enclosures



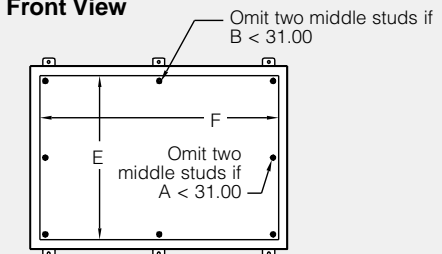
Part No.	Enclosure					
	Outside dimensions (inches)			Mounting centers	Cover size	
	H	W	D		H	E
<b>E 4022HB</b>	4.00	2.00	2.00	2.50	4.25	2.25
<b>E 4033HB</b>	4.25	2.88	2.63	3.38	4.50	3.13

### Technical Specifications

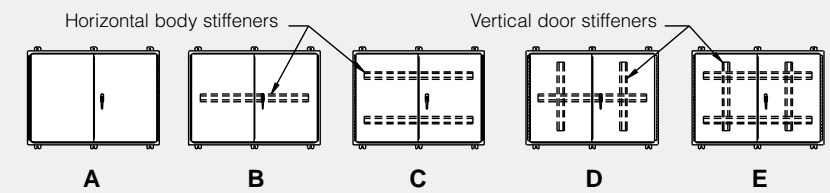
#### Two Door Wallmount Enclosures



Front View



Section X-X



Stiffener Arrangement

Part No.	Enclosure						Door and body stiffener arrangement	Cover size		Mounting Panel		
	Outside dimensions (inches)			Mounting centers		Part No.		Panel size		Usable depth		
	H	W	D	H	W			E	F		G	
	A	B	C	H	W							
<b>E 244208WF</b>	24.00	42.00	8.00	25.25	36.00	A	22.19	20.06	<b>E 42P24</b>	21.00	39.00	8.00
<b>E 244808WF</b>	24.00	48.00	8.00	25.25	42.00	A	22.19	23.06	<b>E 48P24</b>	21.00	45.00	8.00
<b>E 364812WF</b>	36.00	48.00	12.00	37.25	42.00	B	34.19	23.06	<b>E 48P36</b>	33.00	45.00	12.00
<b>E 366012WF</b>	36.00	60.00	12.00	37.25	54.00	D	34.19	29.06	<b>E 60P36</b>	33.00	57.00	11.37*
<b>E 424212WF</b>	42.00	42.00	12.00	43.25	36.00	C	40.19	20.06	<b>E 42P42</b>	39.00	39.00	12.00

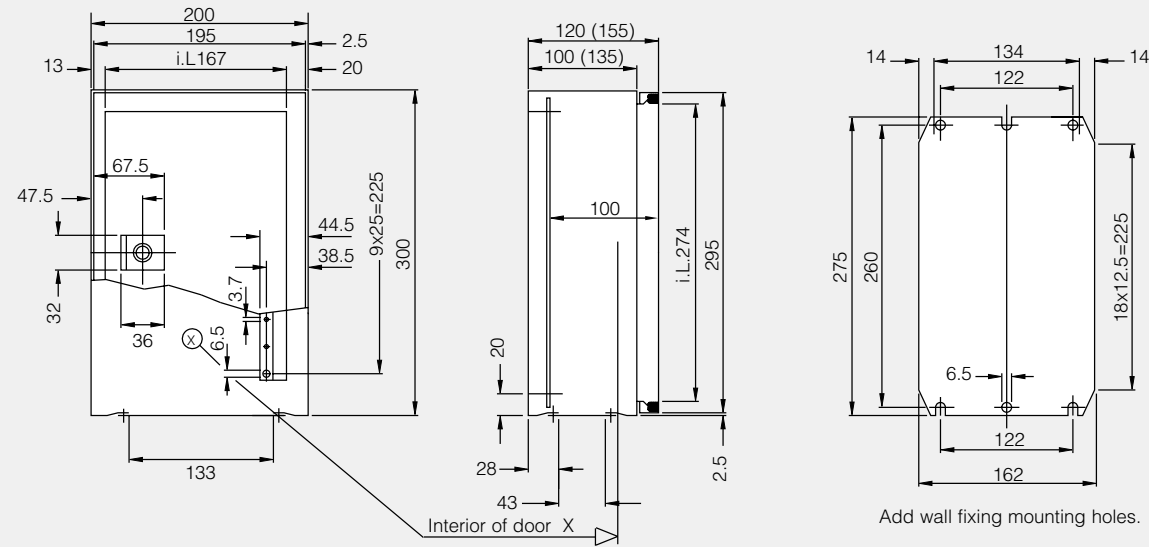
\* Usable depth reduced by .625" at door stiffener.



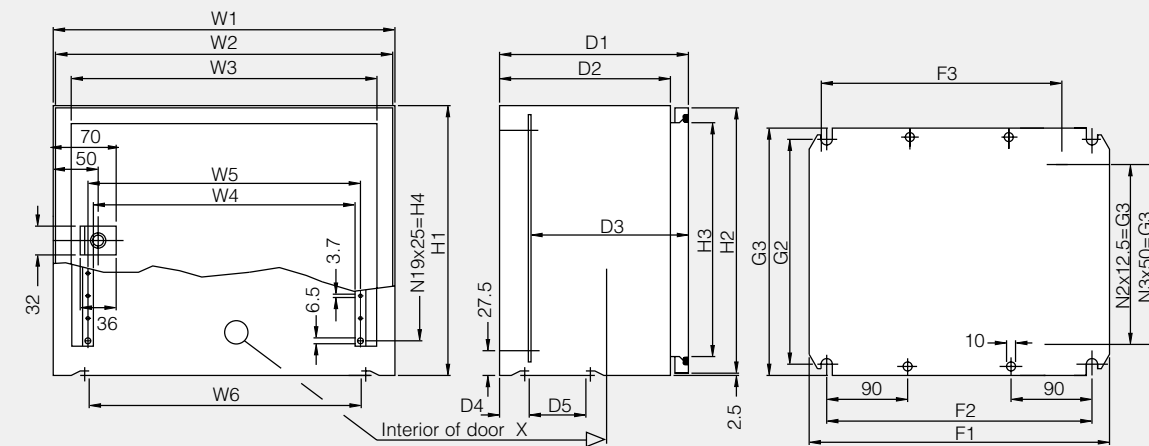
### Technical Specifications

#### AE Wallmount Enclosures

1032600/1035600



1030600/1031600/1033600/1034600/1380600/1039600/1339600



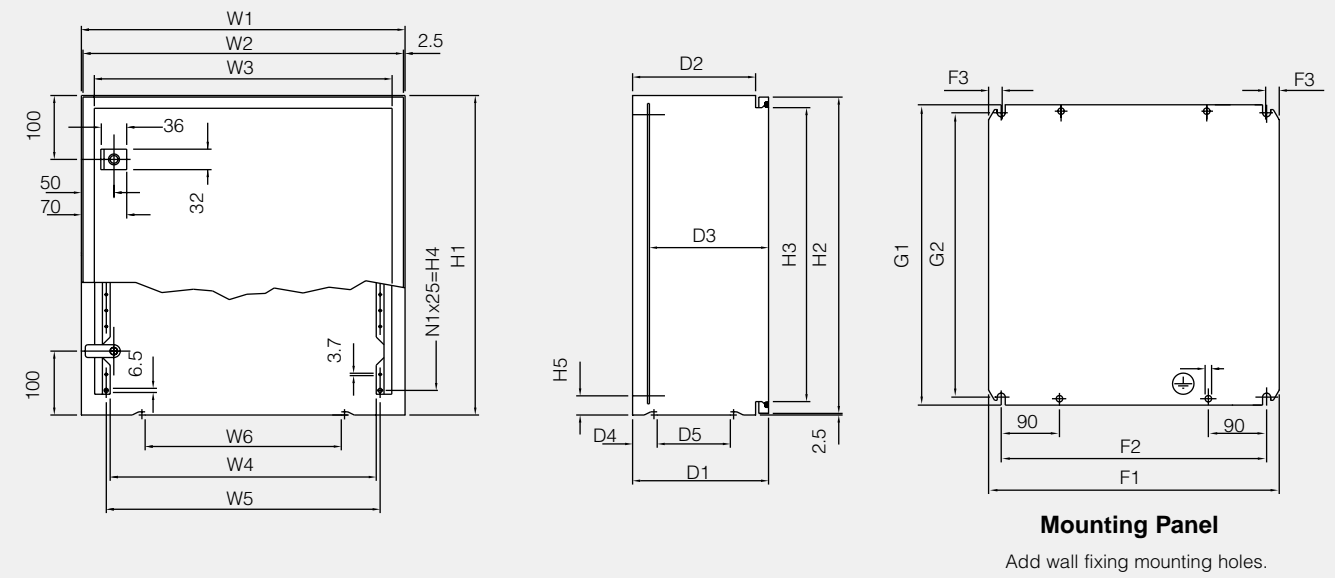
Part No.	Enclosure							
	Height (H1)		Width (W1)		Depth (D1)		Weight	
	inches	mm	inches	mm	inches	mm	lbs	kg
1032600	11.81	300	7.87	200	4.72	120	8.8	4
1035600	11.81	300	7.87	200	6.10	155	9.9	4.5
1030600	11.81	300	14.96	380	6.10	155	18.5	8.4
1033600	11.81	300	11.81	300	8.27	210	15.4	7
1031600	11.81	300	14.96	380	8.27	210	19.2	8.7
1380600	14.96	380	14.96	380	8.27	210	25.3	11.5
1034600	15.75	400	11.81	300	8.27	210	19.4	8.8
1039600	14.96	380	23.62	600	8.27	210	37.4	17
1339600	14.96	380	23.62	600	13.78	350	48.5	22

Part No.	Detailed Dimensions																		
	H2	H3	H4	N1	W2	W3	W4	W5	W6	D2	D3	D4	D5	F1	F2	F3	G1	G2	G3
1032600	See drawings above.																		
1035600	See drawings above.																		
1030600	295	260	225	9	375	340	291	303	303	135	113-129	33	63	334	295	267.5	275	250	200
1033600	295	260	225	9	295	260	211	223	233	190	168-184	33	45	254	215	187.5	275	250	200
1031600	295	260	225	9	375	340	291	303	303	190	168-184	33	63	334	295	267.5	275	250	200
1380600	375	340	275	11	375	340	291	303	303	190	168-184	33	63	334	295	267.5	355	330	300
1034600	395	360	325	13	295	260	211	223	233	190	168-184	33	45	254	215	187.5	375	350	300
1039600	375	340	275	11	595	560	511	523	500	190	168-184	38	113	549	510	482.5	355	330	300
1339600	375	340	275	11	595	560	511	523	500	330	308-324	38	113	549	510	482.5	355	330	300

Dimensions in millimeters (mm) unless otherwise indicated.

### Technical Specifications

#### AE Wallmount Enclosures

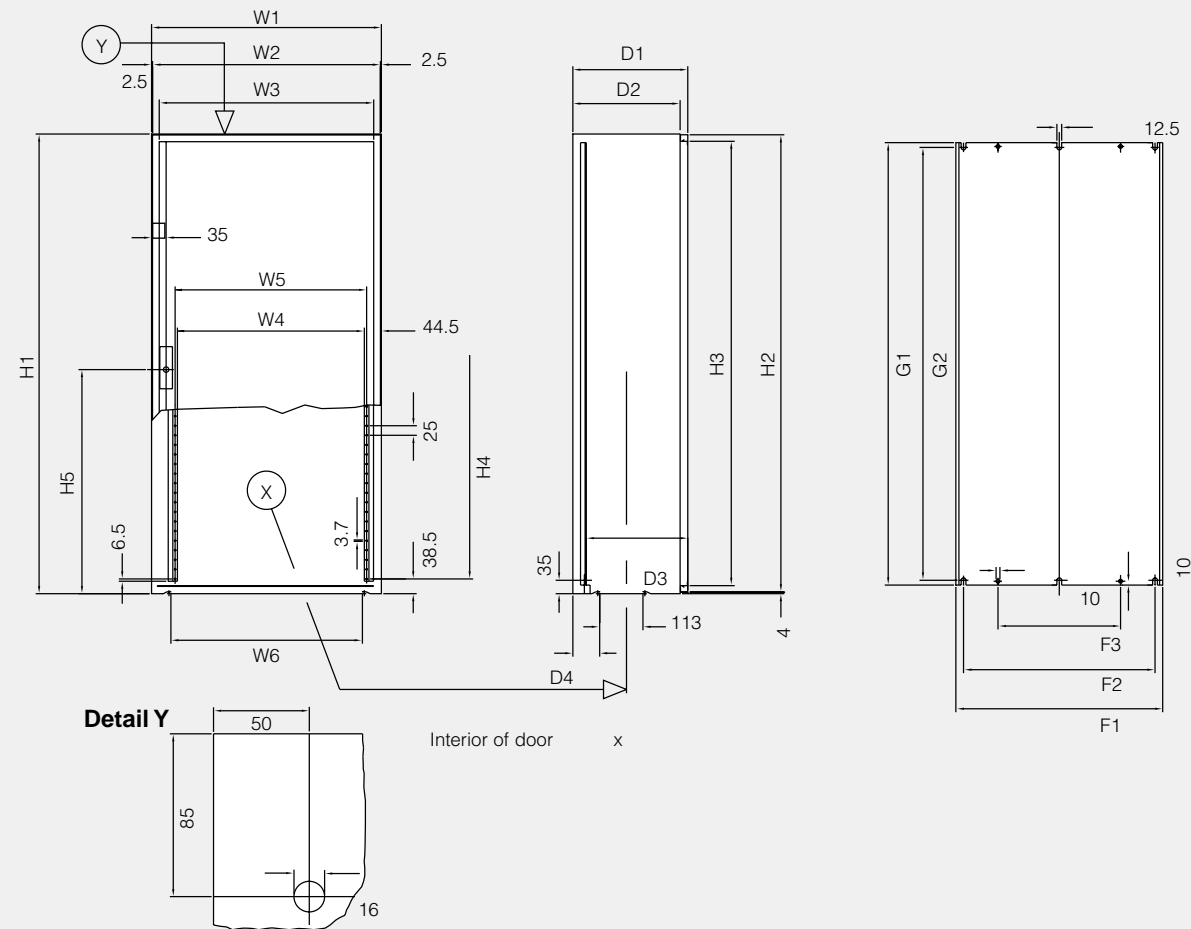


Part No.	Enclosure						
	Height (H1)		Width (W1)		Depth (D1)		Weight
	inches	mm	inches	mm	inches	mm	lbs
1045600	19.69	500	15.75	400	8.27	210	28.6
1050600	19.69	500	19.69	500	8.27	210	41.6
1038600	23.62	600	14.96	380	8.27	210	36.6
1060600	23.62	600	23.62	600	8.27	210	57.5
1076600	29.92	760	23.62	600	8.27	210	70.7
1077600	29.92	760	29.92	760	8.27	210	88.1
1058600	31.50	800	23.62	600	9.84	250	97.9
1057600	27.56	700	19.69	500	9.84	250	57.4
1090600	39.37	1000	23.62	600	9.84	250	121.0
1350600	19.69	500	19.69	500	11.81	300	46.3
1073600	29.92	760	29.92	760	11.81	300	98.0
1097500	35.43	900	29.92	760	11.81	300	110.0
1180600	39.37	1000	31.50	800	11.81	300	125.6
1338600	23.62	600	14.96	380	13.78	350	46.9
1360600	23.62	600	23.62	600	13.78	350	67.8
1376600	29.92	760	23.62	600	13.78	350	83.7

Part No.	Detailed Dimensions																		
	H2	H3	H4	H5	W2	W3	W4	W5	W6	D2	D3	D4	D5	N1	F1	F2	F3	G1	G2
1045600	495	460	425	30	395	360	311	323	303	190	168-184	38	113	17	354	315	13.5	450	400
1050600	495	460	425	30	495	460	411	423	303	190	168-184	38	113	17	449	410	21.0	470	445
1038600	595	560	525	30	375	340	291	303	303	190	168-184	33	63	21	334	295	13.5	570	545
1060600	595	560	525	30	595	560	511	523	500	190	168-184	38	113	21	549	510	21.0	570	545
1076600	755	720	675	30	595	560	511	523	500	190	168-184	38	113	27	549	510	21.0	730	705
1077600	755	720	675	30	755	720	671	683	500	190	168-184	38	113	27	704	665	21.0	730	705
1058600	795	760	725	30	595	560	511	523	500	230	208-224	38	113	29	549	510	21.0	770	745
1057600	695	660	625	30	495	460	411	423	303	230	208-224	38	113	25	449	410	21.0	670	645
1090600	995	960	925	35	595	560	511	523	500	230	208-224	38	113	37	539	500	21.0	955	930
1350600	495	460	425	30	495	460	411	423	303	280	258-274	38	113	17	449	410	21.0	470	445
1073600	755	720	675	30	755	720	671	683	500	280	258-274	38	113	27	704	665	21.0	730	705
1097500	895	860	750	30	755	720	671	683	500	280	258-274	38	113	30	704	665	21.0	870	845
1180600	995	960	925	35	795	760	711	723	500	280	258-274	70	113	37	739	700	21.0	955	930
1338600	595	560	525	30	375	340	291	303	303	330	308-324	84	113	21	334	295	13.5	570	545
1360600	595	560	525	30	595	560	511	523	500	330	308-324	38	113	21	549	510	21.0	570	545
1376600	755	720	675	30	595	560	511	523	500	330	308-324	38	113	27	549	510	21.0	730	705

Dimensions in millimeters (mm) unless otherwise indicated.

### Technical Specifications AE Wallmount Enclosures



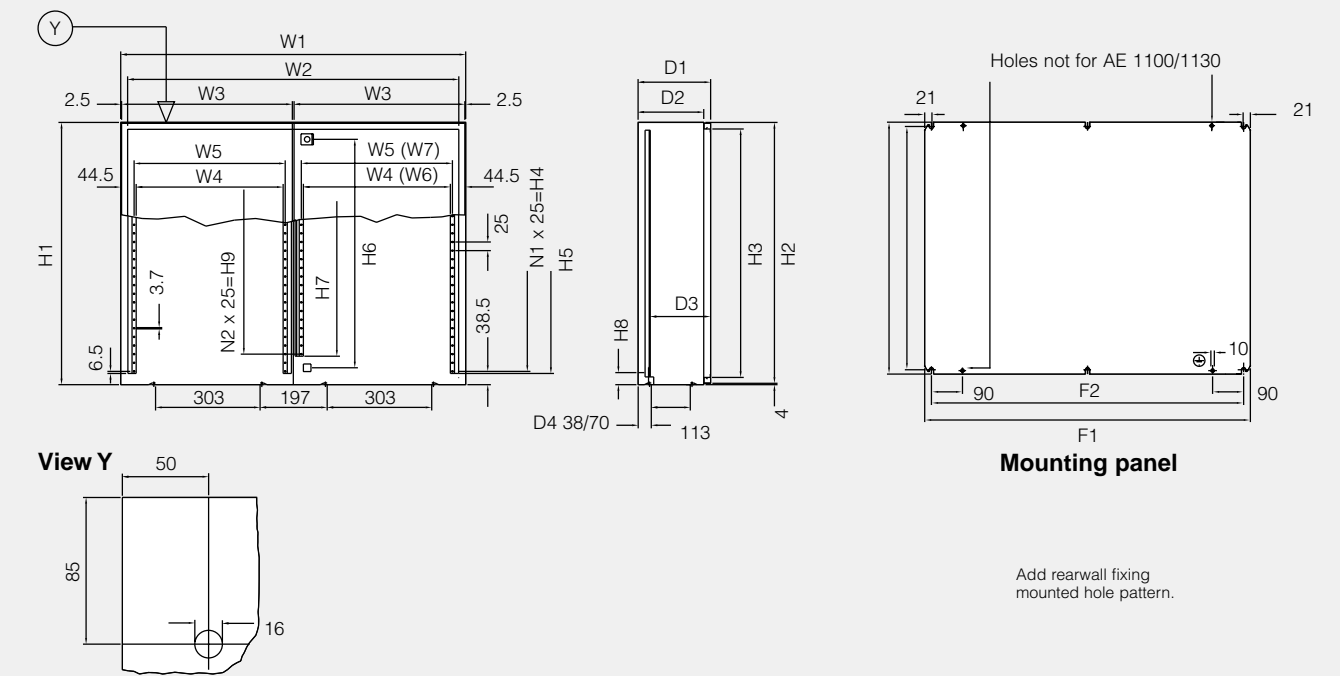
Enclosure				
Height (H1)	inches	47.24	47.24	47.24
	mm	1200	1200	1200
Width (W1)	inches	23.62	31.50	35.43
	mm	600	800	900
Depth (D1)	inches	11.81	11.81	11.81
	mm	300	300	300
<b>Part No.</b>		<b>1260600</b>	<b>1280600</b>	<b>1097670</b>
Weight	lbs/kg	5.3/2.4	7.9/3.6	165.0/75.0

Dimensions in millimeters (mm) unless otherwise indicated.

Detailed Dimensions																			
Part No.	H2	H3	H4	H5	W2	W3	W4	W5	W6	D2	D3	D4	N1	F1	F2	F3	G1	G2	
<b>1260600</b>	1194	1160	1125	585	595	560	488	500	500	281	264	70	45	540	500	320	1155	1130	
<b>1280600</b>	1194	1160	1125	585	795	760	688	700	500	281	264	70	45	740	700	520	1155	1130	
<b>1097670</b>	1194	1160	1125	585	895	860	788	800	500	281	264	70	45	840	800	620	1155	1130	

Dimensions in millimeters (mm) unless otherwise indicated.

### Technical Specifications AE Wallmount Enclosures



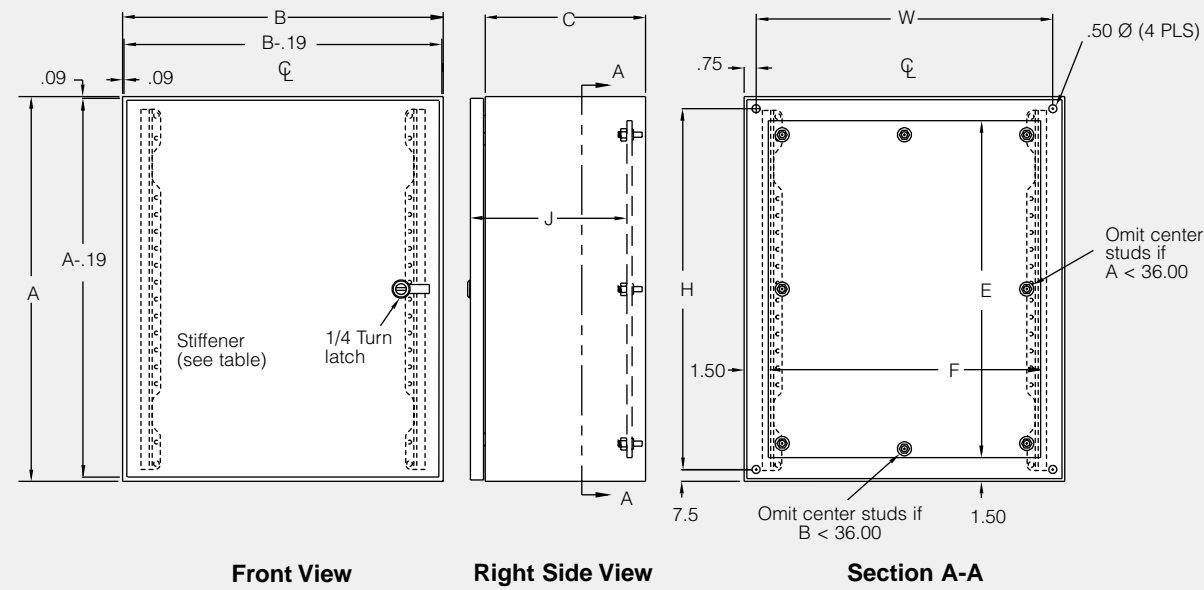
Enclosure						
Height (H1)	inches	29.92	29.92	39.37	47.24	55.12
	mm	760	760	1000	1200	1400
Width (W1)	inches	39.37	39.37	39.37	39.37	39.37
	mm	1000	1000	1000	1000	1000
Depth (D1)	inches	8.27	11.81	11.81	11.81	11.81
	mm	210	300	300	300	300
<b>Part No.</b>		<b>1100600</b>	<b>1130600</b>	<b>1110600</b>	<b>1213600</b>	<b>1114600</b>
Weight	lbs	114.6	123.5	156.5	187.4	213.8
	kg	52.0	56.0	71.0	85.0	97.0

Dimensions in millimeters (mm) unless otherwise indicated.

Detailed Dimensions																							
Part No.	H2	H3	H4	H5	H6	H7	H8	H9	W2	W3	W4	W5	W6	W7	D2	D3	D4	N1	N2	F1	F2	G1	G2
<b>1100600</b>	755	720	675	698	662	598	30	575	960	495	424	436	-	-	190	168-184	38	27	23	944	905	730	705
<b>1130600</b>	755	720	675	698	662	598	30	575	960	495	424	436	-	-	280	258-274	70	27	23	944	905	730	705
<b>1110600</b>	995	960	925	938	894	838	35	825	960	495	424	436	-	-	280	258-274	70	37	33	939	900	955	930
<b>1213600</b>	1194	1160	1125	-	585	1125	35	-	960	495	424	436	393	405	282	264	70	45	-	940	900	1155	1130
<b>1114600</b>	1394	1360	1325	-	685	1325	35	-	960	495	424	436	393	405	282	264	70	53	-	940	900	1355	1330

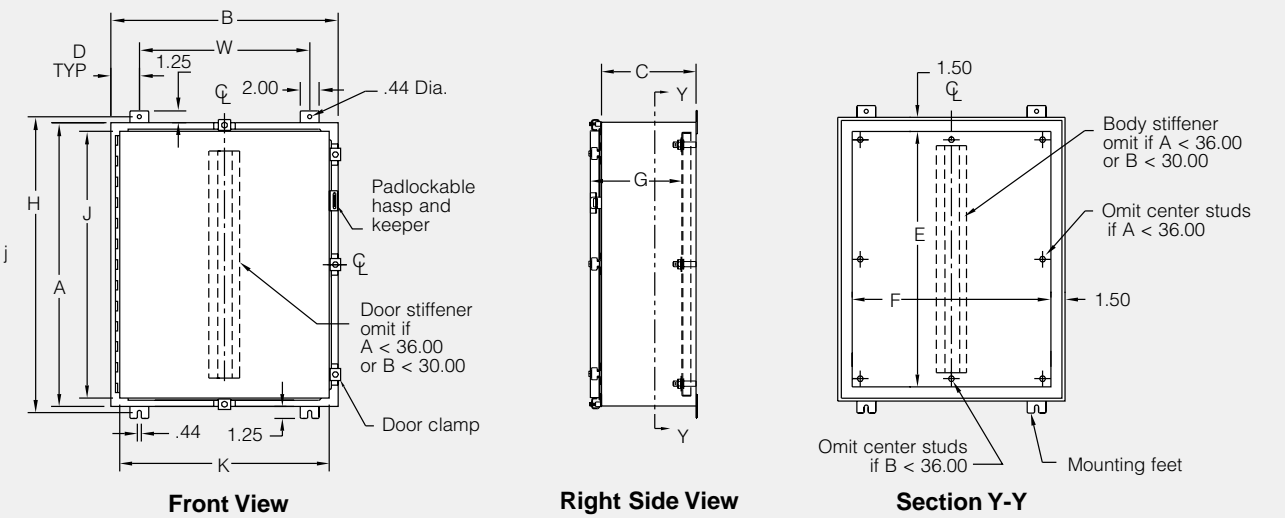
Dimensions in millimeters (mm) unless otherwise indicated.

**Technical Specifications**  
Legacy Series Enclosures



Part No.	Enclosure			Mounting centers		Usable depth
	Outside dimensions (inches)			H	W	
	H	W	D			
	A	B	C			J
L W120806	12.00	8.00	6.00	10.5	6.5	5.0
L W121206	12.00	12.00	6.00	10.5	10.5	5.0
L W121608	12.00	16.00	8.00	10.5	14.5	7.0
L W161206	16.00	12.00	6.00	14.5	10.5	5.0
L W161208	16.00	12.00	8.00	14.5	10.5	7.0
L W161606	16.00	16.00	6.00	14.5	14.5	5.0
L W161608	16.00	16.00	8.00	14.5	14.5	7.0
L W201606	20.00	16.00	6.00	18.5	14.5	5.0
L W201608	20.00	16.00	8.00	18.5	14.5	7.0
L W202008	20.00	20.00	8.00	18.5	18.5	7.0
L W202012	20.00	20.00	12.00	18.5	18.5	7.0
L W241608	24.00	16.00	8.00	22.5	14.5	7.0
L W242008	24.00	20.00	8.00	22.5	18.5	7.0
L W242408	24.00	24.00	8.00	22.5	22.5	7.0
L W242412	24.00	24.00	12.00	22.5	22.5	11.0
L W242416	24.00	24.00	16.00	22.5	22.5	15.0
L W302408	30.00	24.00	8.00	28.5	22.5	7.0
L W302412	30.00	24.00	12.00	28.5	22.5	11.0
L W303008	30.00	30.00	8.00	28.5	28.5	7.0
L W303012	30.00	30.00	12.00	28.5	28.5	11.0
L W362408	36.00	24.00	8.00	34.5	22.5	7.0
L W363012	36.00	30.00	12.00	34.5	28.5	11.0
L W423212	42.00	32.00	12.00	40.5	30.5	11.0
L W483612	48.00	36.00	12.00	46.5	34.5	11.0
L W603612	60.00	36.00	12.00	58.5	34.5	11.0

**Technical Specifications**  
One Door Wallmount Boxes

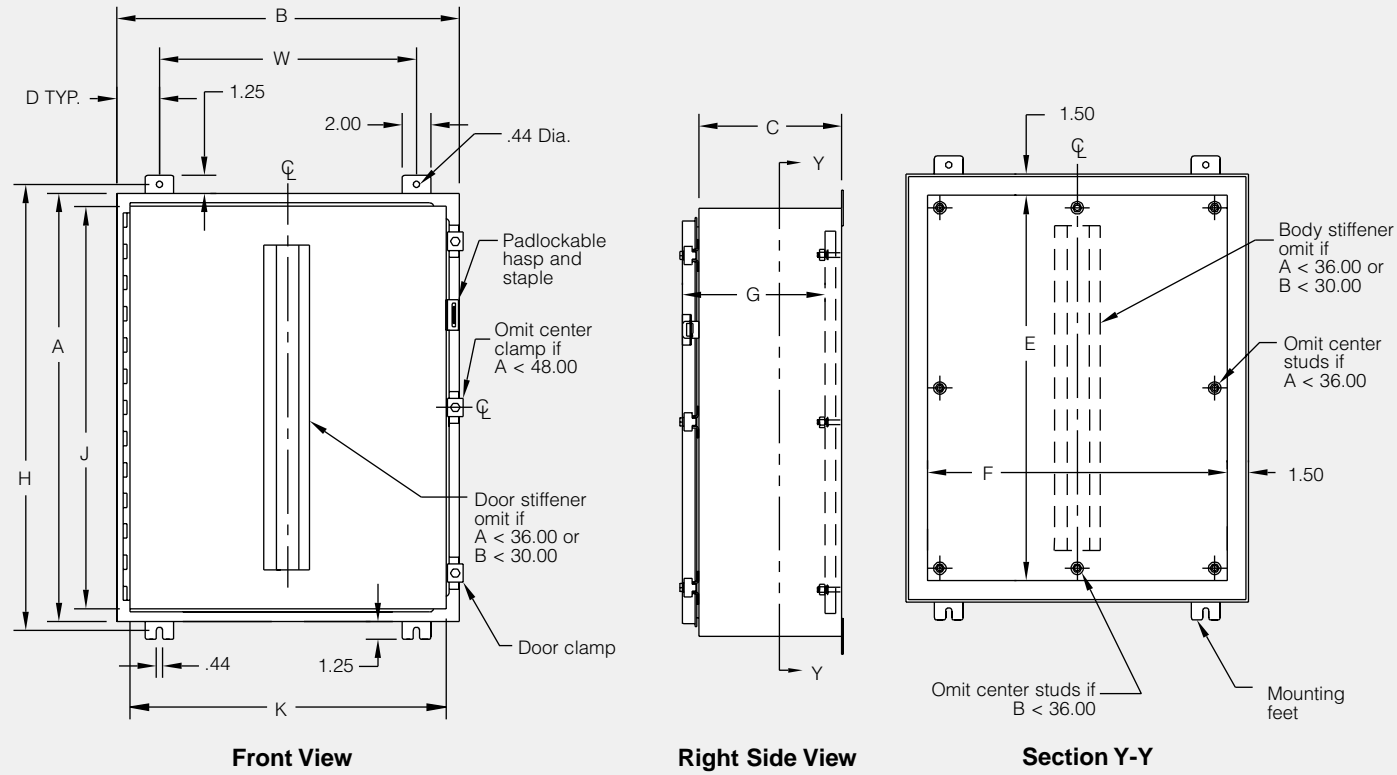


Part No.	Enclosure			Door and body stiffener	Cover size		Mounting Panel						
	Outside dimensions (inches)				H	W	D	Panel size		Usable depth			
	H	W	D					E	F		G		
	A	B	C				J	K					
E 16H12A	16.00	12.00	6.00	NO	17.25	9.50	1.25	14.19	10.16	E 16P12	13.00	9.00	6.00
E 20H16A	20.00	16.00	6.00	NO	21.25	10.00	3.00	18.19	14.16	E 20P16	17.00	13.00	6.00
E 20H20A	20.00	20.00	6.00	NO	21.25	14.00	3.00	18.19	18.16	E 20P20	17.00	17.00	6.00
E 24H12A	24.00	12.00	6.00	NO	25.25	9.50	1.25	22.19	10.16	E 12P24	21.00	9.00	6.00
E 24H16A	24.00	16.00	6.00	NO	25.25	10.00	3.00	22.19	14.16	E 24P16	21.00	13.00	6.00
E 24H24A	24.00	24.00	6.00	NO	25.25	18.00	3.00	22.19	22.16	E 24P24	21.00	21.00	6.00
E 16H12B	16.00	12.00	8.00	NO	17.25	9.50	1.25	14.19	10.16	E 16P12	13.00	9.00	8.00
E 20H16B	20.00	16.00	8.00	NO	21.25	10.00	3.00	18.19	14.16	E 20P16	17.00	13.00	8.00
E 20H20B	20.00	20.00	8.00	NO	21.25	14.00	3.00	18.19	18.16	E 20P20	17.00	17.00	8.00
E 24H20B	24.00	20.00	8.00	NO	25.25	14.00	3.00	22.19	18.16	E 24P20	21.00	17.00	8.00
E 24H24B	24.00	24.00	8.00	NO	25.25	18.00	3.00	22.19	22.16	E 24P24	21.00	21.00	8.00
E 30H24B	30.00	24.00	8.00	NO	31.25	18.00	3.00	28.19	22.16	E 30P24	27.00	21.00	8.00
E 30H30B	30.00	30.00	8.00	NO	31.25	24.00	3.00	28.19	28.16	E 30P30	27.00	27.00	8.00
E 36H30B	36.00	30.00	8.00	YES	37.25	24.00	3.00	34.19	28.16	E 36P30	33.00	27.00	7.37*
E 24H20C	24.00	20.00	10.00	NO	25.25	14.00	3.00	22.19	18.16	E 24P20	21.00	17.00	10.00
E 30H24C	30.00	24.00	10.00	NO	31.25	18.00	3.00	28.19	22.16	E 30P24	27.00	21.00	10.00
E 48H30C	48.00	30.00	10.00	YES	49.25	24.00	3.00	46.19	28.16	E 48P30	45.00	27.00	9.37*
E 30H24D	30.00	24.00	12.00	NO	31.25	18.00	3.00	28.19	22.16	E 30P24	27.00	21.00	12.00
E 36H30D	36.00	30.00	12.00	YES	37.25	24.00	3.00	34.19	28.16	E 36P30	33.00	27.00	11.37*
E 48H36D	48.00	36.00	12.00	YES	49.25	30.00	3.00	46.19	34.16	E 48P36	45.00	33.00	11.37*

\* Usable depth reduced by .625" at door stiffener.



### Technical Specifications One Door Wallmount Enclosures



Part No.	Enclosure			Mounting Panel			Door and body stiffener	Door size		Part No.	Panel size		Usable depth	
	Outside dimensions (inches)			Mounting centers				J	K		E	F		G
	H	W	D	H	W	D								
	A	B	D	H	W	D								
<b>E 161206</b>	16.00	12.00	6.00	17.25	9.50	1.25	NO	14.19	10.16	<b>E 16P12</b>	13.00	9.00	6.00	
<b>E 161606</b>	16.00	16.00	6.00	17.25	10.00	3.00	NO	14.19	14.16	<b>E 16P16</b>	13.00	13.00	6.00	
<b>E 201606</b>	20.00	16.00	6.00	21.25	10.00	3.00	NO	18.19	14.16	<b>E 20P16</b>	17.00	13.00	6.00	
<b>E 202006</b>	20.00	20.00	6.00	21.25	14.00	3.00	NO	18.19	18.16	<b>E 20P20</b>	17.00	17.00	6.00	
<b>E 241206</b>	24.00	12.00	6.00	25.25	9.50	1.25	NO	22.19	10.16	<b>E 12P24</b>	21.00	9.00	6.00	
<b>E 241606</b>	24.00	16.00	6.00	25.25	10.00	3.00	NO	22.19	14.16	<b>E 24P16</b>	21.00	13.00	6.00	
<b>E 242006</b>	24.00	20.00	6.00	25.25	14.00	3.00	NO	22.19	18.16	<b>E 24P20</b>	21.00	17.00	6.00	
<b>E 242406</b>	24.00	24.00	6.00	25.25	18.00	3.00	NO	22.19	22.16	<b>E 24P24</b>	21.00	21.00	6.00	
<b>E 161208</b>	16.00	12.00	8.00	17.25	9.50	1.25	NO	14.19	10.16	<b>E 16P12</b>	13.00	9.00	8.00	
<b>E 161608</b>	16.00	16.00	8.00	17.25	10.00	3.00	NO	14.19	14.16	<b>E 16P16</b>	13.00	13.00	8.00	
<b>E 162008</b>	16.00	20.00	8.00	17.25	14.00	3.00	NO	14.19	18.16	<b>E 20P16</b>	13.00	17.00	8.00	
<b>E 201608</b>	20.00	16.00	8.00	21.25	10.00	3.00	NO	18.19	14.16	<b>E 20P16</b>	17.00	13.00	8.00	
<b>E 202008</b>	20.00	20.00	8.00	21.25	14.00	3.00	NO	18.19	18.16	<b>E 20P20</b>	17.00	17.00	8.00	
<b>E 202408</b>	20.00	24.00	8.00	21.25	18.00	3.00	NO	18.19	22.16	<b>E 24P20</b>	17.00	21.00	8.00	
<b>E 241208</b>	24.00	12.00	8.00	25.25	9.50	1.25	NO	22.19	10.16	<b>E 12P24</b>	21.00	9.00	8.00	
<b>E 241608</b>	24.00	16.00	8.00	25.25	10.00	3.00	NO	22.19	14.16	<b>E 24P16</b>	21.00	13.00	8.00	
<b>E 242008</b>	24.00	20.00	8.00	25.25	14.00	3.00	NO	22.19	18.16	<b>E 24P20</b>	21.00	17.00	8.00	
<b>E 242408</b>	24.00	24.00	8.00	25.25	18.00	3.00	NO	22.19	22.16	<b>E 24P24</b>	21.00	21.00	8.00	

\* Usable depth reduced by .625" at door stiffener.

(Chart continued on next page).

### Technical Specifications One Door Wallmount Enclosures

Part No.	Enclosure (Continued)						Door and body stiffener	Door size		Mounting Panel (Continued)			
	Outside dimensions (inches)			Mounting centers				J	K	Part No.	Panel size		Usable depth
	H	W	D	H	W	D					E	F	
	A	B	D	H	W	D							
<b>E 243008</b>	24.00	30.00	8.00	25.25	24.00	3.00	NO	22.19	28.16	<b>E 30P24</b>	21.00	27.00	8.00
<b>E 302008</b>	30.00	20.00	8.00	31.25	14.00	3.00	NO	28.19	18.16	<b>E 30P20</b>	27.00	17.00	8.00
<b>E 302408</b>	30.00	24.00	8.00	31.25	18.00	3.00	NO	28.19	22.16	<b>E 30P24</b>	27.00	21.00	8.00
<b>E 303008</b>	30.00	30.00	8.00	31.25	24.00	3.00	NO	28.19	28.16	<b>E 30P30</b>	27.00	27.00	8.00
<b>E 303608</b>	30.00	36.00	8.00	31.25	30.00	3.00	NO	28.19	34.16	<b>E 36P30</b>	27.00	33.00	8.00
<b>E 362408</b>	36.00	24.00	8.00	37.25	18.00	3.00	NO	34.19	22.16	<b>E 36P24</b>	33.00	21.00	8.00
<b>E 363008</b>	36.00	30.00	8.00	37.25	24.00	3.00	YES	34.19	28.16	<b>E 36P30</b>	33.00	27.00	7.37*
<b>E 363608</b>	36.00	36.00	8.00	37.25	30.00	3.00	YES	34.19	34.16	<b>E 36P36</b>	33.00	33.00	7.37*
<b>E 483608</b>	48.00	36.00	8.00	49.25	30.00	3.00	YES	46.19	34.16	<b>E 48P36</b>	45.00	33.00	7.37*
<b>E 161210</b>	16.00	12.00	10.00	17.25	9.50	1.25	NO	14.19	10.16	<b>E 16P12</b>	13.00	9.00	10.00
<b>E 201610</b>	20.00	16.00	10.00	21.25	10.00	3.00	NO	18.19	14.16	<b>E 20P16</b>	17.00	13.00	10.00
<b>E 202010</b>	20.00	20.00	10.00	21.25	14.00	3.00	NO	18.19	18.16	<b>E 20P20</b>	17.00	17.00	10.00
<b>E 242010</b>	24.00	20.00	10.00	25.25	14.00	3.00	NO	22.19	18.16	<b>E 24P20</b>	21.00	17.00	10.00
<b>E 242410</b>	24.00	24.00	10.00	25.25	18.00	3.00	NO	22.19	22.16	<b>E 24P24</b>	21.00	21.00	10.00
<b>E 302010</b>	30.00	20.00	10.00	31.25	14.00	3.00	NO	28.19	18.16	<b>E 30P20</b>	27.00	17.00	10.00
<b>E 302410</b>	30.00	24.00	10.00	31.25	18.00	3.00	NO	28.19	22.16	<b>E 30P24</b>	27.00	21.00	10.00
<b>E 362410</b>	36.00	24.00	10.00	37.25	18.00	3.00	NO	34.19	22.16	<b>E 36P24</b>	33.00	21.00	10.00
<b>E 363010</b>	36.00	30.00	10.00	37.25	24.00	3.00	YES	34.19	28.16	<b>E 36P30</b>	33.00	27.00	9.37*
<b>E 423610</b>	42.00	36.00	10.00	43.25	30.00	3.00	YES	40.19	34.16	<b>E 42P36</b>	39.00	33.00	9.37*
<b>E 483610</b>	48.00	36.00	10.00	49.25	30.00	3.00	YES	46.19	34.16	<b>E 48P36</b>	45.00	33.00	9.37*
<b>E 603610</b>	60.00	36.00	10.00	61.25	30.00	3.00	YES	58.19	34.16	<b>E 60P36</b>	57.00	33.00	9.37*
<b>E 201612</b>	20.00	16.00	12.00	21.25	10.00	3.00	NO	18.19	14.16	<b>E 20P16</b>	17.00	13.00	12.00
<b>E 242012</b>	24.00	20.00	12.00	25.25	14.00	3.00	NO	22.19	18.16	<b>E 24P20</b>	21.00	17.00	12.00
<b>E 242412</b>	24.00	24.00	12.00	25.25	18.00	3.00	NO	22.19	22.16	<b>E 24P24</b>	21.00	21.00	12.00
<b>E 302412</b>	30.00	24.00	12.00	31.25	18.00	3.00	NO	28.19	22.16	<b>E 30P24</b>	27.00	21.00	12.00
<b>E 303012</b>	30.00	30.00	12.00	31.25	24.00	3.00	NO	28.19	28.16	<b>E 30P30</b>	27.00	27.00	12.00
<b>E 362412</b>	36.00	24.00	12.00	37.25	18.00	3.00	NO	34.19	22.16	<b>E 36P24</b>	33.00	21.00	12.00
<b>E 363012</b>	36.00	30.00	12.00	37.25	24.00	3.00	YES	34.19	28.16	<b>E 36P30</b>	33.00	27.00	11.37*
<b>E 363612</b>	36.00	36.00	12.00	37.25	30.00	3.00	YES	34.19	34.16	<b>E 36P36</b>	33.00	33.00	11.37*
<b>E 423612</b>	42.00	36.00	12.00	43.25	30.00	3.00	YES	40.19	34.16	<b>E 42P36</b>	39.00	33.00	11.37*
<b>E 483612</b>	48.00	36.00	12.00	49.25	30.00	3.00	YES	46.19	34.16	<b>E 48P36</b>	45.00	33.00	11.37*
<b>E 603612</b>	60.00	36.00	12.00	61.25	30.00	3.00	YES	58.19	34.16	<b>E 60P36</b>	57.00	33.00	11.37*
<b>E 363016</b>	36.00	30.00	16.00	37.25	24.00	3.00	YES	34.19	28.16	<b>E 36P30</b>	33.00	27.00	15.37*
<b>E 603616</b>	60.00	36.00	16.00	61.25	30.00	3.00	YES	58.19	34.16	<b>E 60P36</b>	57.00	33.00	15.37*
<b>E 302420</b>	30.00	24.00	20.00	31.25	18.00	3.00	NO	28.19	22.16	<b>E 30P24</b>	27.00	21.00	20.00

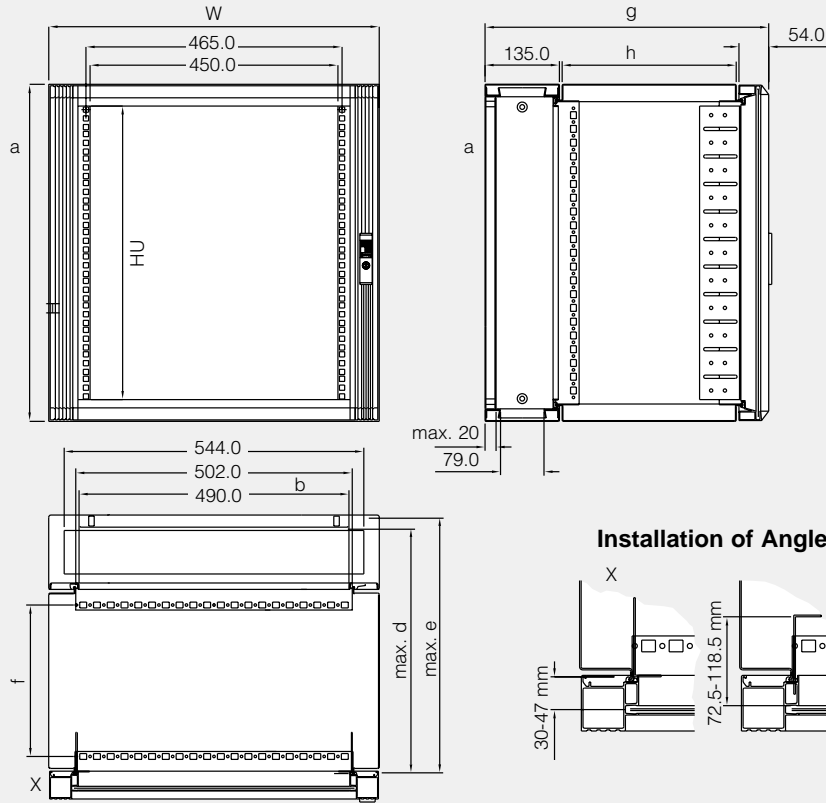
\* Usable depth reduced by .625" at door stiffener.



## Technical Specifications

### EL 3-Part Wallmount Enclosures

#### Section B:B



		Enclosure					
HU (1HU=1.75")		6HU	9HU	12HU	15HU	18HU	21HU
Part No.		7706024	7709024	7712024	7715024	7718024	7721024
Height (H)	inches	13.58	18.82	24.09	29.37	34.57	39.84
	mm	345	478	612	746	878	1012
Width (W)	inches	23.62	23.62	23.62	23.62	23.62	23.62
	mm	600	600	600	600	600	600
b (mm)		274	407	541	674	807	941
c (mm)		299	432	565	699	832	965
d (mm)		442	442	442	442	442	442
e (mm)		460	460	460	460	460	460
f (mm)		275	275	275	275	275	275
g (mm)		600	600	600	600	600	600
h (mm)		391	391	391	391	391	391
Load capacity	lbs	66	99	132	165	165	165
	center section kg	30	45	60	75	75	75

Dimensions in millimeters (mm) unless otherwise indicated.

# WIREWAY & TROUGH

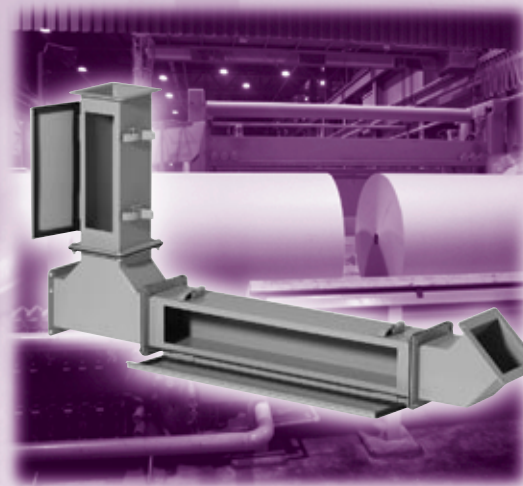
## WIREWAY & TROUGH

Lay-In Type 12 Wireway ..... WWY 1-2

Feed-Through Type 12 Wireway ..... WWY 3-4

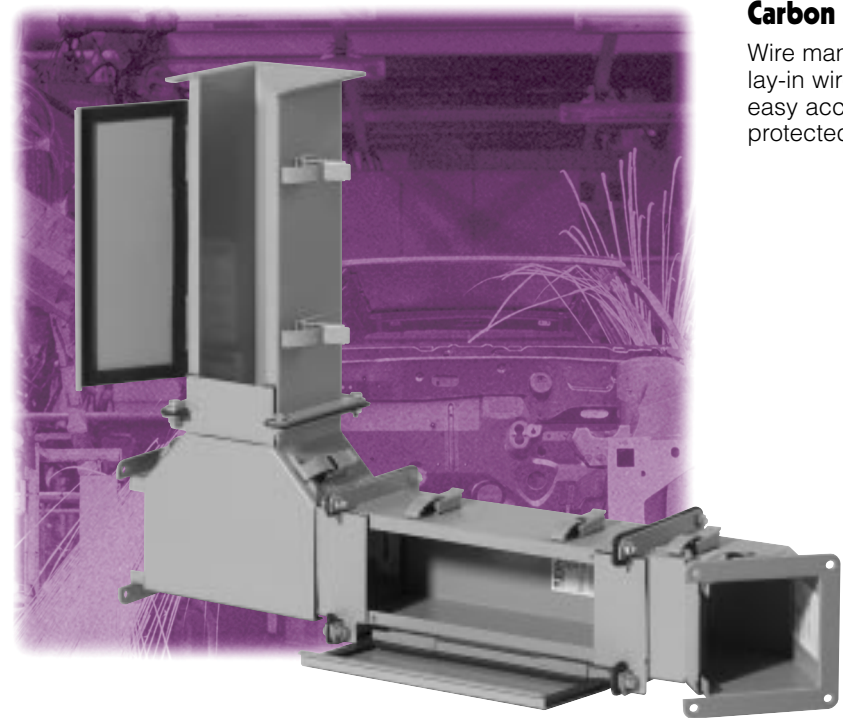
Hinge/Screw Cover Wiring Trough ..... WWY 5-6

Technical Drawings ..... WWY 7-13





# Lay-In Type 12 Wireway



## Carbon Steel Wire Management

Wire management becomes effortless with Rittal Electromate's lay-in wireway products. This system allows fast installation and easy access of wiring throughout the entire run. Wiring is protected against dust, dirt, and water.

### Configuration

- Lay-in type wireways are available in the following sizes:  
2.5" x 2.5"  
4.0" x 4.0"  
6.0" x 6.0"
- Lengths from 6" to 120"
- Continuously welded seams, finished smooth
- Edges on all sections and fittings are finished to prevent damage to wiring
- A complete seal is ensured through heavy butt hinges and quick-release latches
- Oil-resistant urethane gaskets inside cover and between flanges ensure seal when sections and fittings are bolted together
- Hinged sealing plate allows fast and easy access along entire run
- Complete line of fittings are available

### Technical Specifications

- Material:**
- Wireways/covers: 14 or 16 gauge carbon steel
  - Flange ends: 10 gauge carbon steel
- Finish/color:**
- Wireways/covers: polyester-urethane powder coat over phosphatized surfaces – ANSI 61 grey inside and outside

### Protection Ratings

- NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

- Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Pages .....WWY 7-10

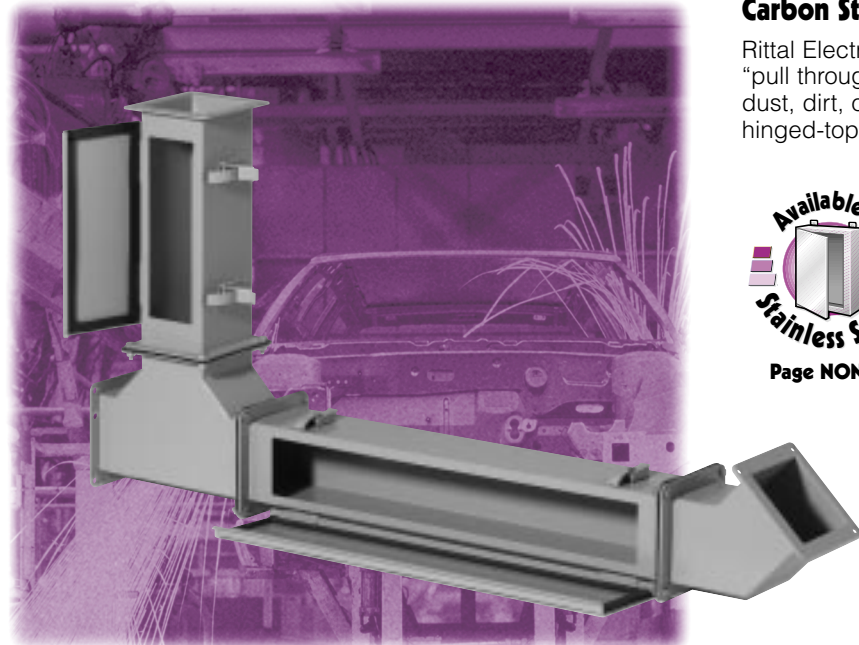
Wireway				
Part No.			Description	Touch-up paint
2.50x2.50	4.00x4.00	6.00x6.00		
E 22L06	*E 44L06	E 66L06	6.00" straight section	E L21
E 22L12	*E 44L12	E 66L12	12.00" straight section	E L21
E 22L24	*E 44L24	E 66L24	24.00" straight section	E L21
-	*E 44L30	-	30.00" straight section	E L21
E 22L36	*E 44L36	E 66L36	36.00" straight section	E L21
E 22L48	*E 44L48	E 66L48	48.00" straight section	E L21
E 22L60	*E 44L60	E 66L60	60.00" straight section	E L21
E 22L120	*E 44L120	E 66L120	120.00" straight section	E L21
E 22LT4	E 44LT4	E 66LT4	Telescopic fitting 2" to 4"	E L21
E 22LT10	E 44LT10	E 66LT10	Telescopic fitting 4" to 10"	E L21
E 22LXL	E 44LXL	E 66LXL	Lay-In cutoff fitting	E L21
E 22LE45A	E 44LE45A	E 66LE45A	45° Elbow, top opening	E L21
E 22LE45B	E 44LE45B	E 66LE45B	45° Elbow, inside opening	E L21
E 22LE45C	E 44LE45C	E 66LE45C	45° Elbow, outside opening	E L21
E 22LE90A	E 44LE90A	E 66LE90A	90° Elbow, top opening	E L21
E 22LE90B	E 44LE90B	E 66LE90B	90° Elbow, inside opening	E L21
E 22LE90C	E 44LE90C	E 66LE90C	90° Elbow, outside opening	E L21
E 22LTA	E 44LTA	E 66LTA	Tee fitting, top opening	E L21
E 22LTC	E 44LTC	E 66LTC	Tee fitting, outside opening	E L21
E 22LC	E 44LC	E 66LC	Cross pull box	E L21
E 22LP	E 44LP	E 66LP	Closure plate	E L21
E 22LB	E 44LB	E 66LB	Box connecting kit	E L21
E 22LCPK	E 44LCPK	E 66LCPK	Center connecting plate kit	E L21
E 22LG	E 44LG	E 66LG	Collar gasket	E L21
-	E 44LRE22	-	Reducer 4" to 2.5"	E L21
-	-	E 66LRE44	Reducer 6" to 4"	E L21
E 22HD	E 44HD	E 66HD	Drop hanger	E L21
E 22HB	E 44HB	E 66HB	Bracket hanger	E L21
E 22LN1	E 44LN1	E 66LN1	1.00" Nipple	E L21
E 22LN2	E 44LN2	E 66LN2	2.00" Nipple	E L21
E 22LN3	E 44LN3	E 66LN3	3.00" Nipple	E L21
E 22LE90KT	E 44LE90KT	E 66LE90KT	90° Elbow, clockwise transposition	E L21
E 22LE90KOKT	E 44LE90KOKT	E 66LE90KOKT	90° Elbow, counterclockwise transposition	E L21
E 22LKT	E 44LKT	E 66LKT	Clockwise transposition section	E L21
E 22LKOKT	E 44LKOKT	E 66LKOKT	Counterclockwise transposition section	E L21
-	E 44BK60	E 66BK60	60.00" Barrier kit	E L21
E 22LF	E 44LF	E 66LF	Kit to connect lay-in to feed-through	E L21
E 22LH	E 44LH	E 66LH	Kit to connect to Robroy/Keystone lay-In type 12	E L21

\* UL listed

### Number Of Conductors

- METAL WIREWAYS AND NONMETALLIC WIREWAYS — Article 362-5: "Wireways shall not contain more than 30 current-carrying conductors at any cross section. Conductors for signaling circuits or controller conductors between a motor and its starter and used only for starting duty shall not be considered as current-carrying conductors. The sum of cross-sectional areas of all contained conductors at any cross section of the wireway shall not exceed 20 percent of the interior cross-sectional area of the wireway." For complete descriptions, please refer to NFPA 70.
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# Feed-Through Type 12 Wireway



## Carbon Steel Wire Management

Rittal Electromate's feed-through wireway products require "pull through" installation of wiring. Wiring is protected against dust, dirt, oil, and water. All straight sections feature a hinged-top design for easy access.



### Configuration

- Feed-through wireways are available in the following sizes:  
2.5" x 2.5"  
4.0" x 4.0"  
6.0" x 6.0"
- Lengths from 12" to 120"
- Continuously welded seams, finished smooth
- Edges on all sections and fittings are finished to prevent damage to wiring
- A complete seal is ensured through heavy butt hinges and quick-release latches
- Oil-resistant urethane gaskets inside cover and between flanges ensure seal when sections and fittings are bolted together

### Technical Specifications

- Material:**
- Wireways/covers: 14 gauge carbon steel
  - Flange ends: 10 gauge carbon steel
- Finish/color:**
- Wireways/covers: polyester-urethane powder coat over phosphatized surfaces – ANSI 61 grey inside and outside

### Protection Ratings

- NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

- Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

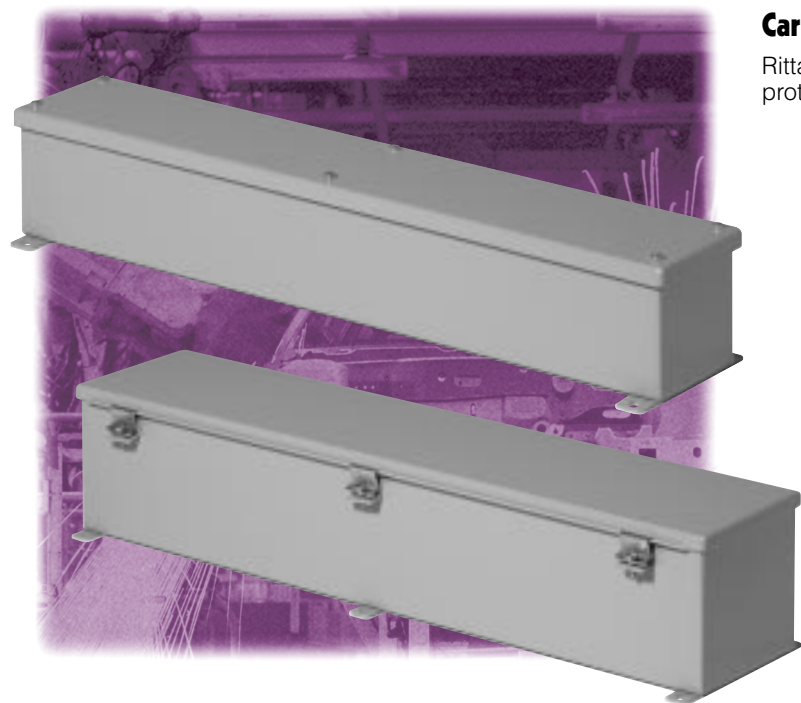
**Pages** ..... WWY 11-12

Wireway				
Part No.			Description	Touch-up paint
2.50x2.50	4.00x4.00	6.00x6.00		
E 22W12	E 44W12	E 66W12	12.00" straight section	E L21
E 22W24	E 44W24	E 66W24	24.00" straight section	E L21
E 22W36	E 44W36	E 66W36	36.00" straight section	E L21
E 22W48	E 44W48	E 66W48	48.00" straight section	E L21
E 22W60	E 44W60	E 66W60	60.00" straight section	E L21
E 22W120	E 44W120	E 66W120	120.00" straight section	E L21
E 22WA	E 44WA	E 66WA	Telescopic fitting	E L21
E 22WX	E 44WX	E 66WX	Cutoff fitting	E L21
E 22WE22.5	E 44WE22.5	E 66WE22.5	22.5° elbow	E L21
E 22WE45	E 44WE45	E 66WE45	45° elbow	E L21
E 22WE90	E 44WE90	E 66WE90	90° elbow	E L21
E 22WT	E 44WT	E 66WT	Tee	E L21
E 22WC	E 44WC	E 66WC	Cross pull box	E L21
E 22WP	E 44WP	E 66WP	Closure plate	E L21
E 22WB	E 44WB	E 66WB	Box connecting kit	E L21
E 22WG	E 44WG	E 66WG	Collar gasket	E L21
E 22WTF	E 44WTF	E 66WTF	Flange	E L21
-	E 44WR22	-	Reducer 4" to 2.5"	E L21
-	-	E 66WR44	Reducer 6" to 4"	E L21
E 22WSC	E 44WSC	E 66WSC	Swivel nipple	E L21
E 22WN1	E 44WN1	E 66WN1	1.00" nipple	E L21
E 22WN2	E 44WN2	E 66WN2	2.00" nipple	E L21
E 22WN3	E 44WN3	E 66WN3	3.00" nipple	E L21
E 22WN6	E 44WN6	E 66WN6	6.00" nipple	E L21
E 22HB	E 44HB	E 66HB	Bracket hanger	E L21
E 22HD	E 44HD	E 66HD	Drop hanger	E L21
-	E 44BK60	E 66BK60	60.00" Barrier kit	E L21
E 22LF	E 44LF	E 66LF	Kit to connect feed-through to lay-in	E L21

### Number Of Conductors

- METAL WIREWAYS AND NONMETALLIC WIREWAYS — Article 362-5: "Wireways shall not contain more than 30 current-carrying conductors at any cross section. Conductors for signaling circuits or controller conductors between a motor and its starter and used only for starting duty shall not be considered as current-carrying conductors. The sum of cross-sectional areas of all contained conductors at any cross section of the wireway shall not exceed 20 percent of the interior cross-sectional area of the wireway." For complete descriptions, please refer to NFPA 70.
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# Hinge/Screw Cover Wiring Trough



## Carbon Steel Type 12 Wire Management

Rittal Electromate's wireway trough offers a simple solution to protect wiring against dust, dirt, oil, and water.

### Configuration

- Hinge cover wireways are available in the following sizes:  
4.0" x 4.0"      8.0" x 8.0"  
6.0" x 6.0"      12.0" x 12.0"
- Screw cover wireways are available in two sizes:  
2.5" x 2.5"  
4.0" x 4.0"
- Lengths from 12" to 48" for hinge cover
- Lengths from 12" to 30" for screw cover
- Continuously welded seams, finished smooth
- Edges on all sections and fittings are finished to prevent damage to wiring
- Captive cover screws ensure proper seal on screw cover versions
- A complete seal is ensured through continuous hinges and screw clamps
- Oil-resistant urethane gaskets
- External mounting brackets

### Technical Specifications

- Material:**
- Wireways/covers: 14 gauge carbon steel
- Finish/color:**
- Wireways/covers: polyester-urethane powder coat over phosphatized surfaces  
– ANSI 61 grey inside and outside

### Protection Ratings

- NEMA Type**     1     4     4X     12     13

### Certifications/Approvals

- Listings**       UL     CUL     CSA     TÜV

### Technical Drawings

Page .....WWY 13

Hinge Cover Wiring Trough				
Part No.	Outside dimensions (inches)			Touch-up paint
	H	W	L	
E 4412HC	4.00	4.00	12.00	E L21
E 4418HC	4.00	4.00	18.00	E L21
E 4424HC	4.00	4.00	24.00	E L21
E 4430HC	4.00	4.00	30.00	E L21
E 4436HC	4.00	4.00	36.00	E L21
E 4448HC	4.00	4.00	48.00	E L21
E 6612HC	6.00	6.00	12.00	E L21
E 6618HC	6.00	6.00	18.00	E L21
E 6624HC	6.00	6.00	24.00	E L21
E 6636HC	6.00	6.00	36.00	E L21
E 6648HC	6.00	6.00	48.00	E L21
E 8812HC	8.00	8.00	12.00	E L21
E 8824HC	8.00	8.00	24.00	E L21
E 8836HC	8.00	8.00	36.00	E L21
E 121224HC	12.00	12.00	24.00	E L21

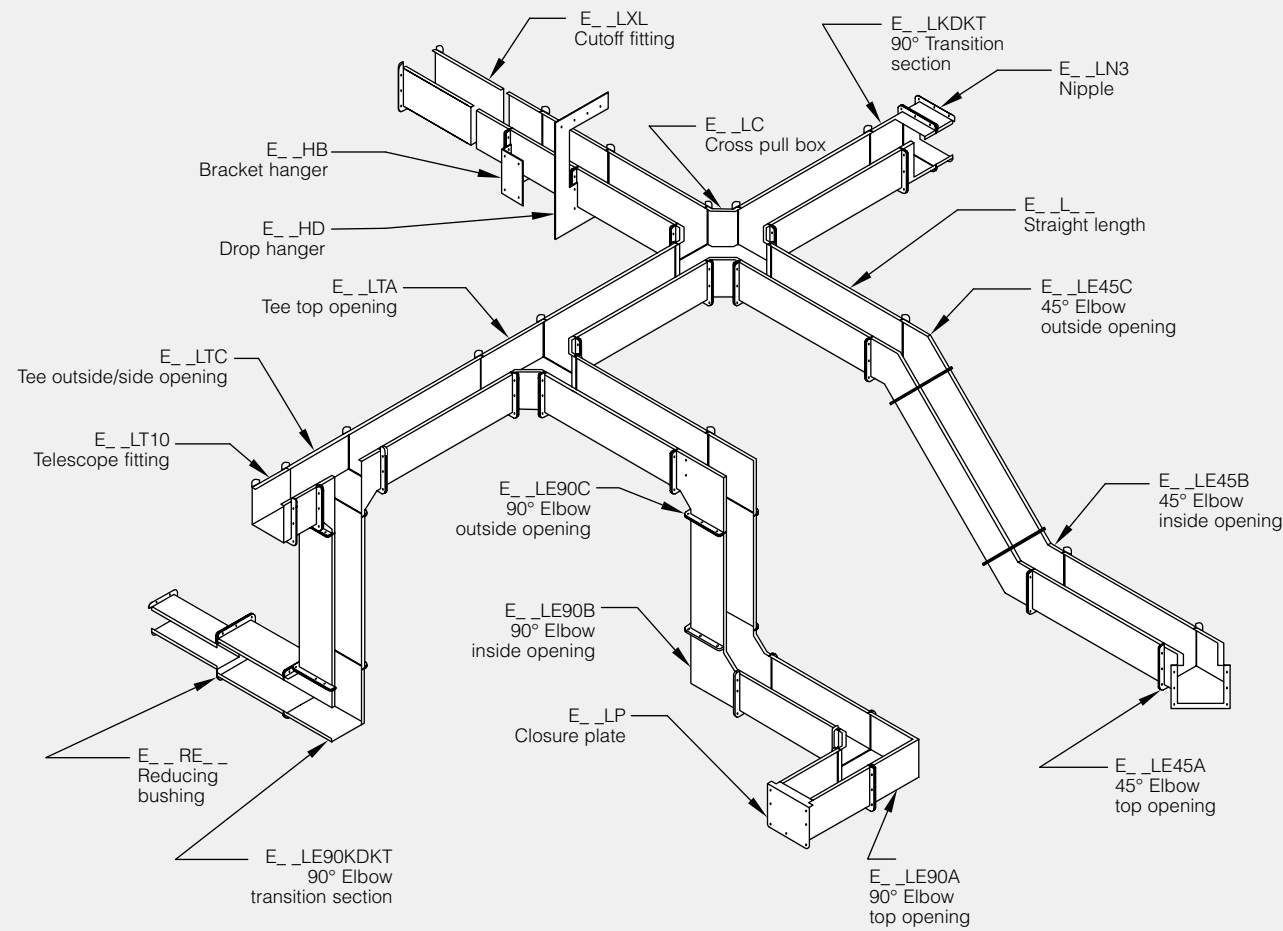
Screw Cover Wiring Trough				
Part No.	Outside dimensions (inches)			Touch-up paint
	H	W	L	
E 2212SC	2.50	2.50	12.00	E L21
E 4412SC	4.00	4.00	12.00	E L21
E 4418SC	4.00	4.00	18.00	E L21
E 4424SC	4.00	4.00	24.00	E L21
E 4430SC	4.00	4.00	30.00	E L21

### Number Of Conductors

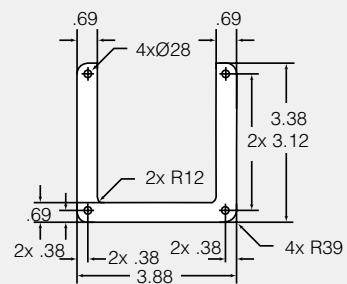
- METAL WIREWAYS AND NONMETALLIC WIREWAYS — Article 362-5: "Wireways shall not contain more than 30 current-carrying conductors at any cross section. Conductors for signaling circuits or controller conductors between a motor and its starter and used only for starting duty shall not be considered as current-carrying conductors. The sum of cross-sectional areas of all contained conductors at any cross section of the wireway shall not exceed 20 percent of the interior cross-sectional area of the wireway." For complete descriptions, please refer to NFPA 70.
  - Reprinted with permission from NFPA 70-1996, the *National Electrical Code*® Handbook, Copyright® 1998, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the referenced subject which represented only by the standard in its entirety.
  - *National Electrical Code*® and *NEC*® are registered trademarks of the National Fire Protection Association, Inc., Quincy, MA 02269.



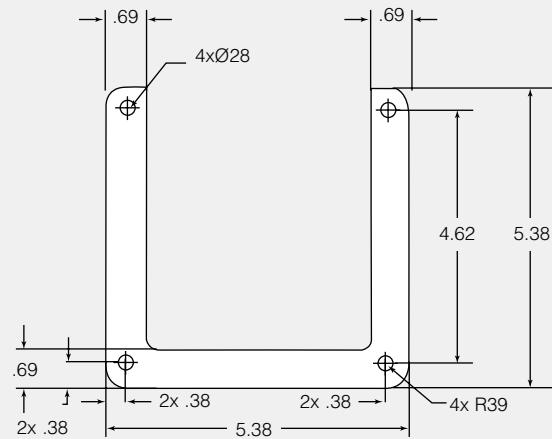
**Technical Specifications**  
Lay-In Type 12 Wireway



Wireway																													
A x B	C	C	C	C	C	C	C	E	F	G	H	I	J	K	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
2.5 x 2.5	6	12	24	-	36	48	60	120	2.28	2.28	-	5.25	6.00	4.54	5.79	3.50	2.50	0.50	4.50	2.25	3.75	10.50	5.87	2.28	4.00	5.25	3.00	8.00	4.00
4 x 4	6	12	24	30	36	48	60	120	3.77	3.77	3.82	6.75	6.00	5.29	7.29	4.75	3.00	1.00	6.00	2.25	4.75	11.50	5.87	3.77	4.75	6.75	3.30	9.50	4.75
6 x 6	6	12	24	-	36	48	60	120	5.77	5.77	5.82	8.75	6.00	6.29	9.29	7.00	5.00	1.00	7.38	2.50	7.00	18.50	9.62	5.77	5.75	8.75	3.72	11.50	5.75

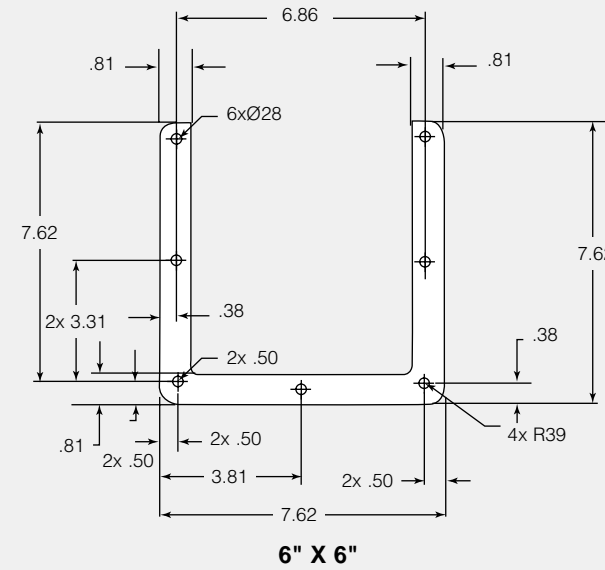


2.5" X 2.5"

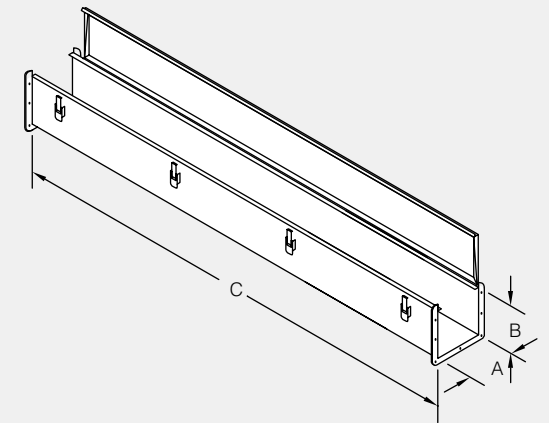


4" X 4"

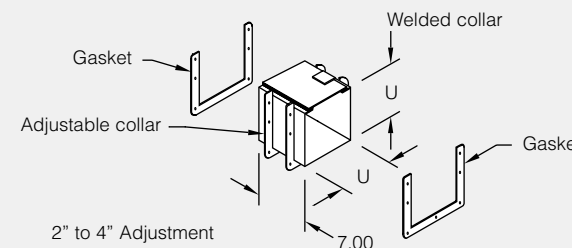
**Technical Specifications**  
Lay-In Type 12 Wireway



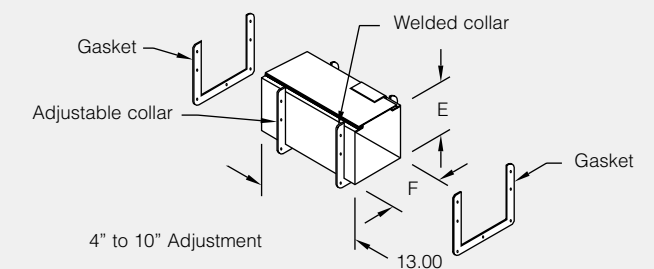
6" X 6"



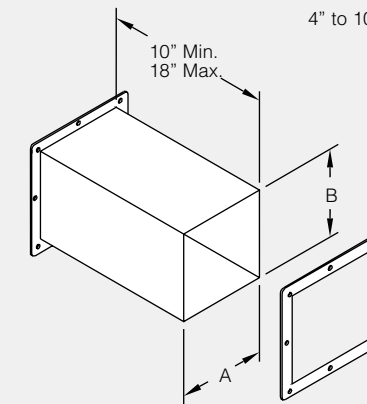
Straight Length



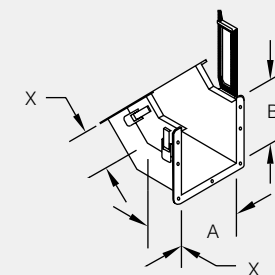
Telescope Fitting



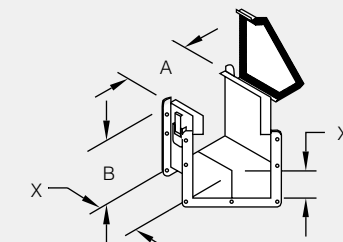
Telescope Fitting



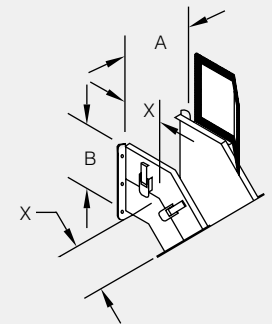
Cut-Off Fitting



45° Elbow Inside Opening

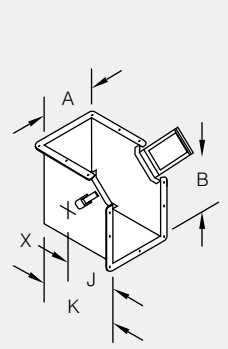


45° Elbow Top Opening

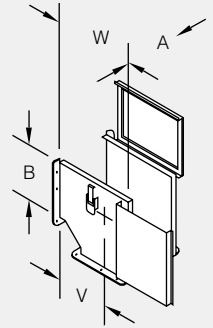


45° Elbow Outside Opening

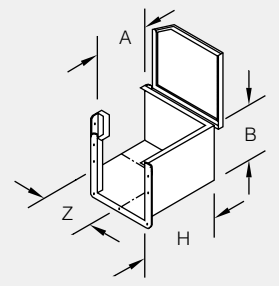
**Technical Specifications**  
Lay-In Type 12 Wireway



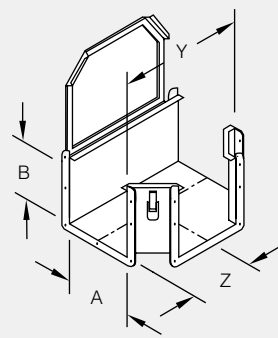
90° Elbow Inside Opening



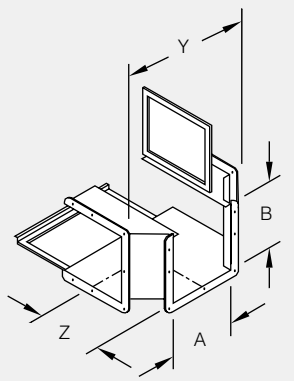
90° Elbow Outside Opening



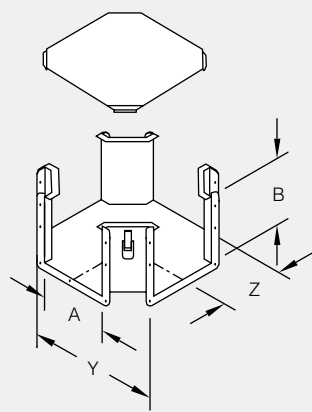
90° Elbow Top Opening



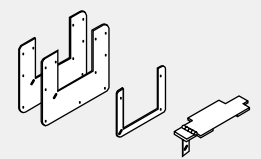
Tee Top Opening



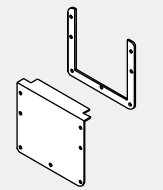
Tee Outside & Side Opening



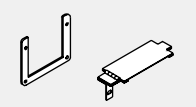
Cross Pull Box



Reducing Bushing



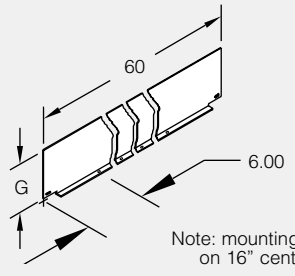
Closure Kit



Center Connecting Kit



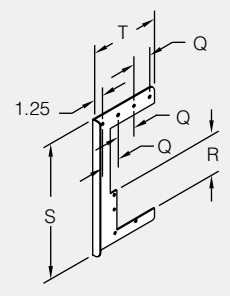
Collar Gasket



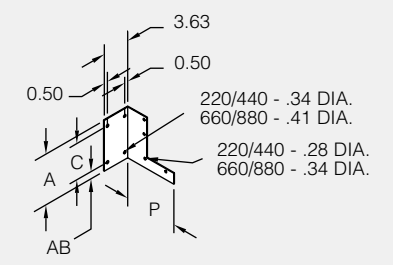
60" Barrier Kit

Note: mounting holes on 16" centers

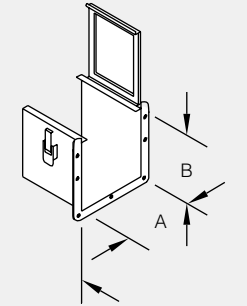
**Technical Specifications**  
Lay-In Type 12 Wireway



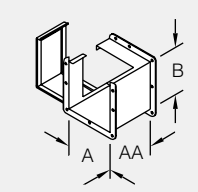
Drop Hanger



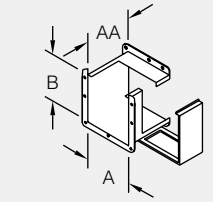
Bracket Hanger



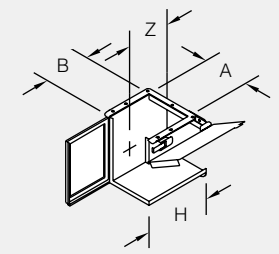
Nipple



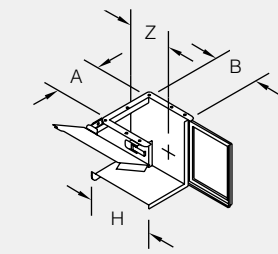
90° Transition Section Counter Clockwise



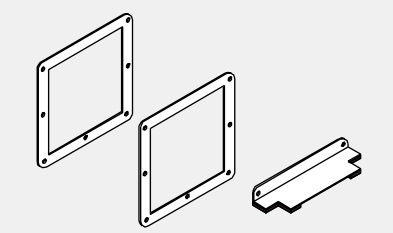
90° Transition Section Clockwise



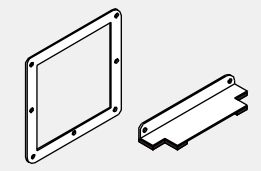
90° Elbow Counter Clockwise Transition Section



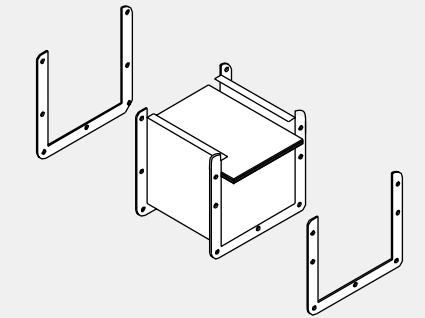
90° Elbow Clockwise Transition Section



Box Connecting Kit

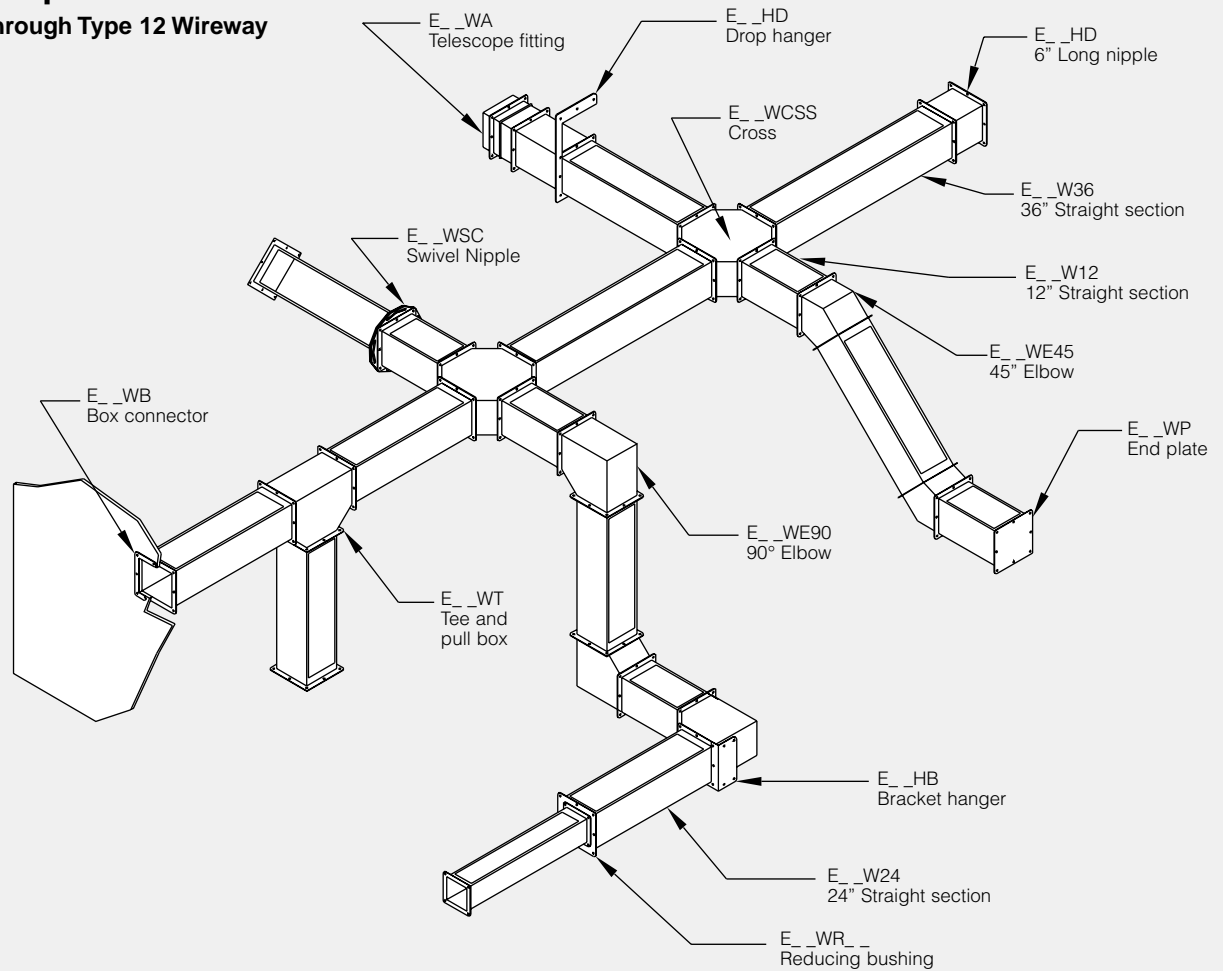


Kit To Connect Lay-In To Feed-Through

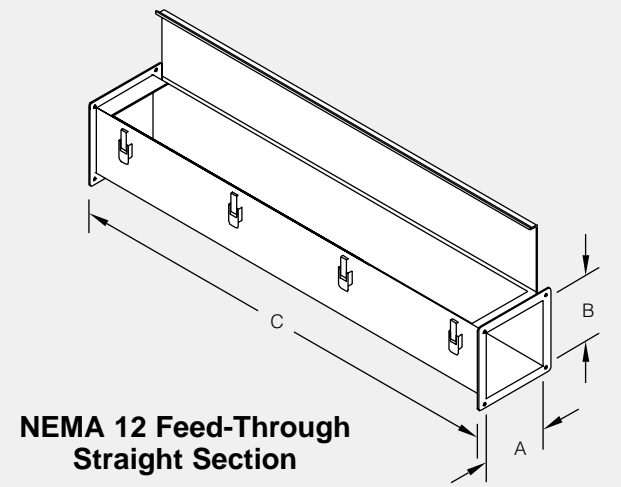
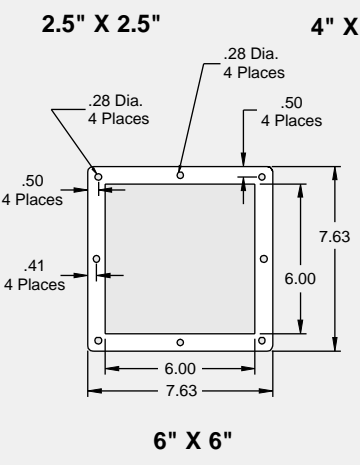
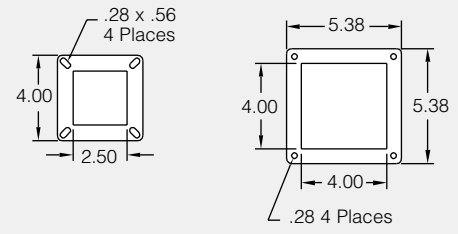


Rittal Electromate To Robroy/Keystone Adaptor

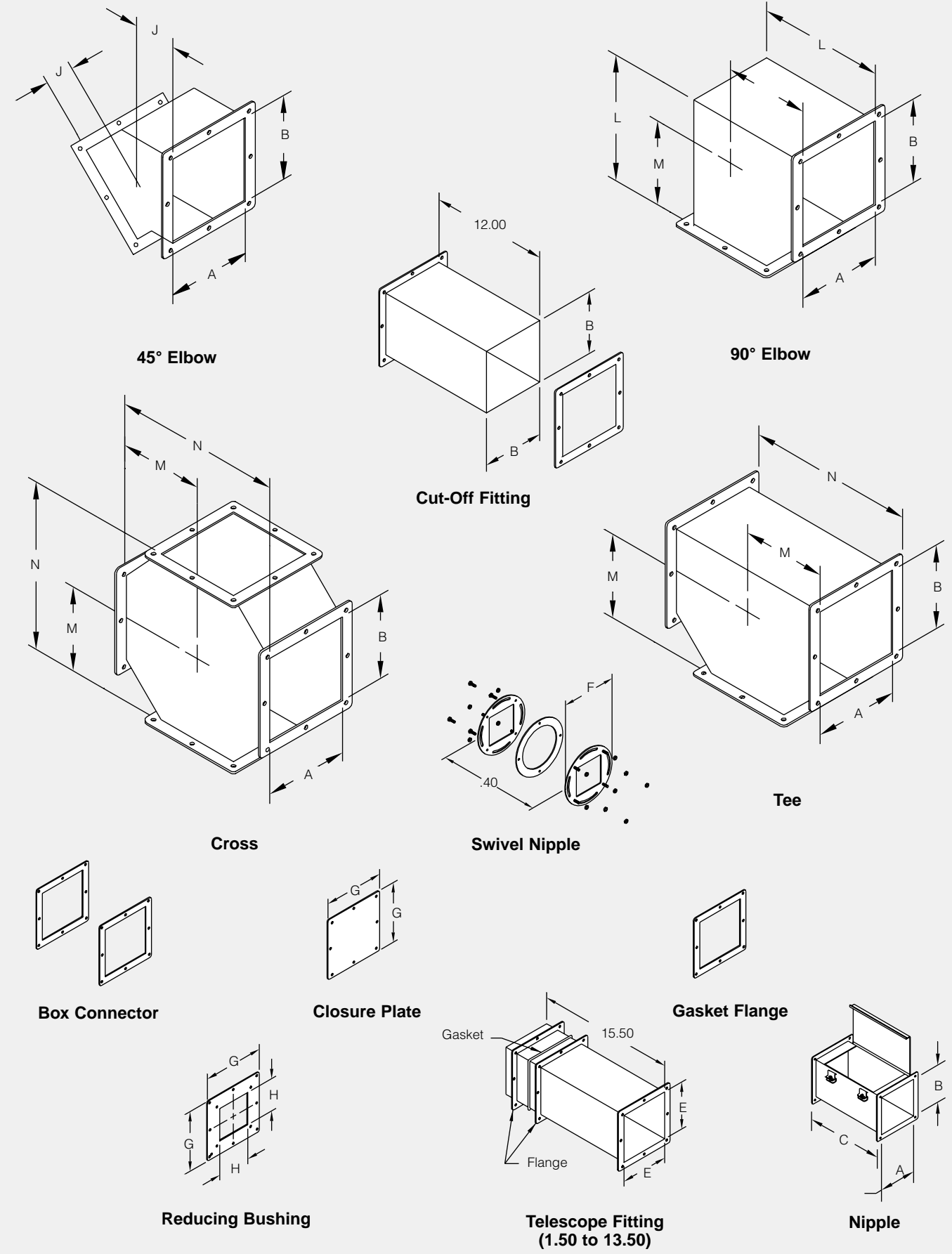
**Technical Specifications**  
Feed-Through Type 12 Wireway



Wireway															
A x B	C	C	C	C	C	C	E	F	G	I	J	K	L	M	N
2.5 x 2.5	12	24	36	48	60	120	2.22	6.10	4.00	-	3.00	2.75	5.25	4.00	8.00
4 x 4	12	24	36	48	60	120	3.68	7.54	5.38	2.50	3.30	2.90	6.25	4.75	9.50
6 x 6	12	24	36	48	60	120	5.68	10.36	7.62	4.00	3.72	3.10	8.75	5.75	11.50



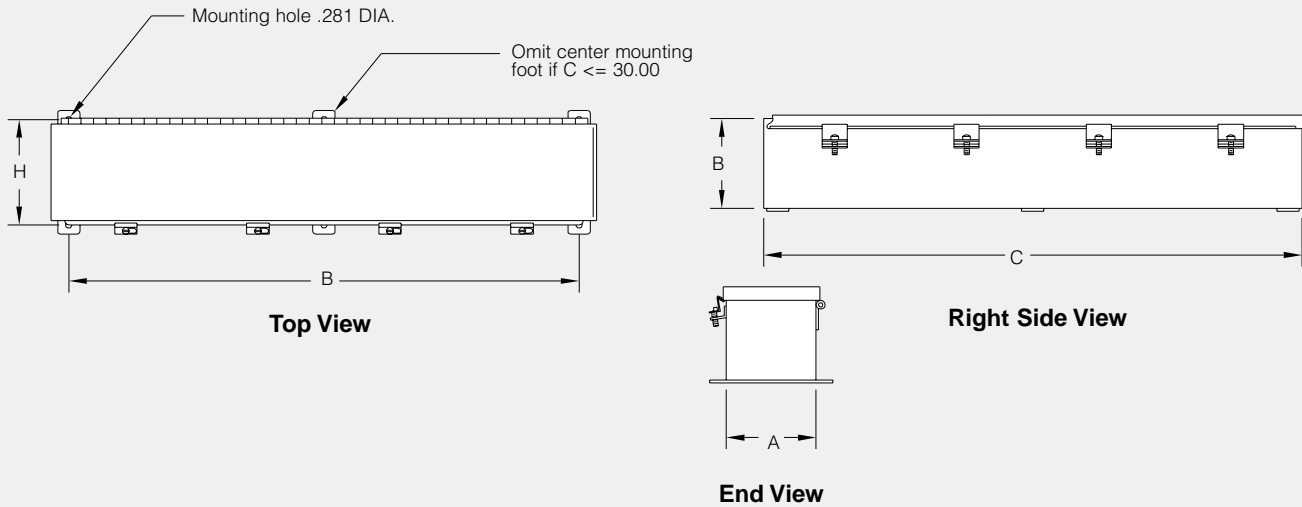
**Technical Specifications**  
Feed-Through Type 12 Wireway





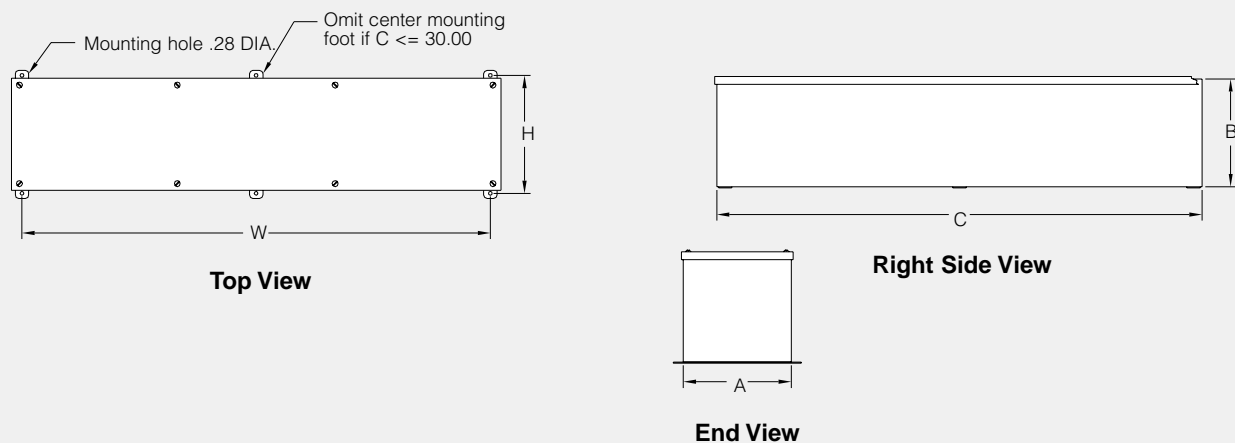
## Technical Specifications

### Hinge Cover Wiring Trough



Wiring Trough						
Part No.	Outside dimensions (inches)			Mounting centers		No. of screw clamps
	H	W	L	H	W	
E 4412HC	4.00	4.00	12.00	4.68	10.75	2
E 4418HC	4.00	4.00	18.00	4.68	16.75	2
E 4424HC	4.00	4.00	24.00	4.68	22.75	2
E 4430HC	4.00	4.00	30.00	4.68	28.75	3
E 4436HC	4.00	4.00	36.00	4.68	34.75	3
E 4448HC	4.00	4.00	48.00	4.68	46.75	3
E 6612HC	6.00	6.00	12.00	6.68	10.75	2
E 6618HC	6.00	6.00	18.00	6.68	16.75	2
E 6624HC	6.00	6.00	24.00	6.68	22.75	2
E 6636HC	6.00	6.00	36.00	6.68	34.75	3
E 6648HC	6.00	6.00	48.00	6.68	46.75	3
E 8812HC	8.00	8.00	12.00	8.68	10.75	2
E 8824HC	8.00	8.00	24.00	8.68	22.75	2
E 8836HC	8.00	8.00	36.00	8.68	34.75	3
E 121224HC	12.00	12.00	24.00	12.68	22.75	2

### Screw Cover Wiring Trough



Wiring Trough						
Part No.	Outside dimensions (inches)			Mounting centers		No. of screw clamps
	H	W	L	H	W	
E 2212SC	2.50	2.50	12.00	3.25	10.75	4
E 4412SC	4.00	4.00	12.00	4.75	10.75	4
E 4418SC	4.00	4.00	18.00	4.75	16.75	6
E 4424SC	4.00	4.00	24.00	4.75	22.75	6
E 4430SC	4.00	4.00	30.00	4.75	28.75	8

# FREESTANDING ENCLOSURES

## FREESTANDING ENCLOSURES

AK Freestanding Enclosures ..... FST 1-2

One Door Freestanding Enclosures ..... FST 3

One Door Modular Cabinets ..... FST 4

TS8 Modular Freestanding Enclosures ..... FST 5-6

PS Modular Freestanding Enclosures ..... FST 7-8

PS Network Enclosures ..... FST 9-10

One/Two Door Freestanding Cabinets ... FST 11-12

Two Door Floormount Enclosures ..... FST 13-14

Technical Drawings ..... FST 15-27



# AK Freestanding Enclosures

## AK Series NEMA Rated Freestanding Enclosures

Rittal's AK enclosures provide mid-size solutions for industrial applications. Rittal's AK Series features sturdy, unibody construction with a knife-edge perimeter to provide protection against dust and moisture.



### Configuration

- NEMA 1 and 12, IP 55 or 56
- Foamed-on gaskets
- Maximum strength and stability through a welded unibody construction
- Stiffener/mounting frame on door
- Off-the-shelf availability
- E-coat primer and powder paint provide superior corrosion resistance
- Knife-edge design protects against liquid entry
- Integrated grounding provisions on all surfaces

### Technical Specifications

#### Material:

- *Body*: 16 ga/1.5 mm sheet steel
- *Door(s)*: 14 ga/2 mm
- *Mounting panel*: 11 ga/3 mm, hot-dipped galvanized zinc

#### Finish/color:

- *Body, door(s)*: E-coat primed, powder painted, RAL 7032 pebble grey
- *Mounting panel*: Type M

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Page** ..... **FST 15**

Part No.	Enclosure				Mounting Panel										
	Approximate outside dimensions H'xW'xD'	NEMA rating	Number of doors	Exact outside dimensions						Dimensions					
				inches			mm			inches			mm		
H	W	D	H	W	D	H	W	D	H	W	H	W	D		
1646600	48x24x16	1, 12	1	47.24	23.62	15.75	1200	600	400	44.29	20.24	1125	514		
1648600	48x32x16	1, 12	1	47.24	31.50	15.75	1200	800	400	44.29	28.11	1125	714		
1650600	48x39x16	1, 12	1	47.24	39.37	15.75	1200	1000	400	44.29	35.39	1125	914		
1652600	48x47x16	1, 12	2	47.24	47.24	15.75	1200	1200	400	44.29	43.86	1125	1114		
1647600	56x39x16	1, 12	1	55.12	39.37	15.75	1400	1000	400	52.17	35.39	1325	914		

Part No.	Accessories					
	Base		Print pocket	Door switch	Handle	
	4" high	8" high			Ergoform-S	Pushbutton insert
1646600	2911200	2912200	2514000	4127000	2450000	2468000
1648600	2901200	2902200	2514000	4127000	2450000	2468000
1650600	2891200	2892200	2514000	4127000	2450000	2468000
1652600	2921200	2922200	2514000	4127000	2450000	2468000
1647600	2891200	2892200	2514000	4127000	2450000	2468000





# AK/ES Freestanding Enclosures



## AK Series NEMA Rated Freestanding Enclosures

Rittal's AK enclosures provide mid-size solutions for industrial applications. Rittal's AK Series features sturdy, uni-body construction with a knife-edge perimeter to provide protection against dust and moisture.

## ES Series NEMA Rated Freestanding Enclosures

ES Series uni-body enclosures feature a removable rear wall and door and the same patented mounting hole pattern as Rittal's PS Series. Its 10-fold, cold rolled steel frame acts as a self-supporting structure and provides outstanding load capacity and rigidity. The ES provides a high-strength, high-value solution for virtually any freestanding application where modularity is not required.



**For ES FMDC Enclosures, please see pages 42-43.**

Enclosure										Mounting Panel			
Approximate outside dimensions H'xW'xD'	NEMA rating	Part No.	Number of doors	Exact outside dimensions						Dimensions			
				Inches			Millimeters			Inches		Millimeters	
				H	W	D	H	W	D	H	W	H	W
48x24x16	1, 12, 13	<b>AK 1646</b>	1	47.24	23.62	15.75	1200	600	400	44.29	20.24	1125	514
48x32x16	1, 12, 13	<b>AK 1648</b>	1	47.24	31.50	15.75	1200	800	400	44.29	28.11	1125	714
48x47x16	1, 12, 13	<b>AK 1652</b>	2	47.24	47.24	15.75	1200	1200	400	44.29	43.86	1125	1114
63x32x14	1, 12, 13	<b>ES 5928</b>	1	62.99	31.50	13.78	1600	800	350	58.90	27.52	1496	699
63x40x14	1, 12, 13	<b>ES 5064</b>	1	62.99	39.37	13.78	1600	1000	350	58.90	35.39	1496	899
63x47x14	1, 12, 13	<b>ES 5922</b>	2	62.99	47.24	13.78	1600	1200	350	58.90	43.27	1496	1099
63x63x14	1, 12, 13	<b>ES 5926</b>	2	62.99	62.99	13.78	1600	1600	350	58.90	59.02	1496	1499
63x24x20	1, 12, 13	<b>ES 5665</b>	1	62.99	23.62	19.69	1600	600	500	58.90	19.65	1496	499
63x32x20	1, 12, 13	<b>ES 5865</b>	1	62.99	31.50	19.69	1600	800	500	58.90	27.52	1496	699
63x47x20	1, 12, 13	<b>ES 5265</b>	2	62.99	47.24	19.69	1600	1200	500	58.90	43.27	1496	1099
71x24x16	1, 12, 13	<b>ES 5684</b>	1	70.87	23.62	15.75	1800	600	400	66.77	19.65	1696	499
71x32x16	1, 12, 13	<b>ES 5884</b>	1	70.87	31.50	15.75	1800	800	400	66.77	27.52	1696	699
71x40x16	1, 12, 13	<b>ES 5084</b>	1	70.87	39.37	15.75	1800	1000	400	66.77	35.39	1696	899
71x47x16	1, 12, 13	<b>ES 5284</b>	2	70.87	47.24	15.75	1800	1200	400	66.77	43.27	1696	1099
71x63x16	1, 12, 13	<b>ES 5784</b>	2	70.87	62.99	15.75	1800	1600	400	66.77	59.02	1696	1499
71x71x16	1, 12, 13	<b>ES 5183</b>	2	70.87	70.87	15.75	1800	1800	400	66.77	66.89	1696	1699
79x24x20	1, 12, 13	<b>ES 5605</b>	1	78.74	23.62	19.69	2000	600	500	74.65	19.65	1896	499
79x32x20	1, 12, 13	<b>ES 5805</b>	1	78.74	31.50	19.69	2000	800	500	74.65	27.52	1896	699
79x40x20	1, 12, 13	<b>ES 5005</b>	1	78.74	39.37	19.69	2000	1000	500	74.65	35.39	1896	899
79x47x20	1, 12, 13	<b>ES 5205</b>	2	78.74	47.24	19.69	2000	1200	500	74.65	43.27	1896	1099
79x72x20	1, 12, 13	<b>ES 5905</b>	2	78.74	70.87	19.69	2000	1800	500	74.65	66.89	1896	1699



# Rittal Freestanding Enclosures

## Advantages:

- NEMA 1 and 12 (NEMA 13, ES only)/ IP55 or 56
- NEMA 4 upgrade available
- UL/CSA and TÜV approvals
- Foamed-on gaskets
- Maximum strength and stability through a welded uni-body construction
- 25mm hole pattern accepts Rittal's standard accessory products
- Reversible hinging door (ES only)
- Stiffener/mounting frame on door
- Depth adjustable mounting panel (ES only)
- Time saving quick assembly method (ES only)
- Off-the-shelf availability
- E-coat primer and powder paint provide superior corrosion resistance
- Knife-edge design protects against liquid entry
- Integrated grounding provisions on all surfaces

## Configuration:

- Enclosure with door(s)
- Door, right hand hinged (reversible on ES)
- Removable rear wall (ES only)
- Mounting panel
- 2-part bottom cable entry panel (AK)
- 3-part bottom cable entry panel (ES)
- 4 transportation eyebolts (ES only, not installed)
- Door stiffener/mounting frame

## Technical Specifications:

### Material:

*Body:* AK: 16 ga/1.5mm sheet steel  
ES: 15 ga/1.8mm sheet steel

*Door(s):* 14 ga/2mm

*Rearwall (ES only):* 16 ga/1.5mm

*Mounting panel:* 11 ga/3mm, hot-dipped galvanized zinc

### Finish:

*Body, door(s):* E-coat primed, powder painted, RAL 7032-pebble grey

*Rearwall (ES only):* E-coat primed, powder painted, RAL 7032-pebble grey

*Mounting panel:* Type M

## Accessories

Enclosure Part No.	Base			Viewing door	Swing frame		Cable collecting	Handle		Print pocket	Flourescent light	Door switch
	4" high	8" high	12" high		Swing frame kit	Installation rail		Ergoform	Pushbutton insert			
AK 1646	SO 2911	SO 2912	SO 1656	FT 2765	SR 2322	SR 1985	AS 2036	SZ 2468	SZ 2514	PS 2514	PS 4143	PS 4127
AK 1648	SO 2901	SO 2902	SO 1658	FT 2766	SR 2323	SR 1986	AS 2038	SZ 2450	SZ 2468	SZ 2514	PS 4144	PS 4127
AK 1652	SO 2921	SO 2922	SO 1662	-	-	-	AS 2037	SZ 2450	SZ 2468	SZ 2514	PS 4145	PS 4127
ES 5928	SO 2990	SO 2991	-	PS 4507	SR 2333	SR 1997	PS 4192	SZ 2450	SZ 2468	PS 4118	PS 4144	PS 4127
ES 5064	SO 2992	SO 2993	-	-	-	-	PS 4336	SZ 2450	SZ 2468	PS 4124	PS 4144	PS 4127
ES 5922	SO 2994	SO 2995	-	-	2 x SR 2331	SR 1996	PS 4196	SZ 2450	SZ 2468	PS 4116	PS 4145	PS 4127
ES 5926	SO 2996	SO 2997	-	-	-	-	PS 4338	SZ 2450	SZ 2468	PS 4118	PS 4145	PS 4127
ES 5665	SO 2836	SO 2837	-	PS 4503	SR 2331	SR 1994	PS 4191	SZ 2450	SZ 2468	PS 4116	PS 4143	PS 4127
ES 5865	SO 2905	SO 2906	-	PS 4507	SR 2333	SR 1997	PS 4192	SZ 2450	SZ 2468	SZ 2513	PS 4144	PS 4127
ES 5265	SO 2846	SO 2847	-	-	2 x SR 2331	SR 1996	PS 4196	SZ 2450	SZ 2468	PS 4116	PS 4145	PS 4127
ES 5684	SO 2839	SO 2840	-	PS 4504	SR 2336	SR 1994	PS 4191	SZ 2450	SZ 2468	PS 4116	PS 4143	PS 4127
ES 5884	SO 2807	SO 2808	-	PS 4508	SR 2338	SR 1997	PS 4192	SZ 2450	SZ 2468	PS 4118	PS 4144	PS 4127
ES 5084	SO 2903	SO 2904	-	-	-	-	PS 4336	SZ 2450	SZ 2468	PS 4124	PS 4144	PS 4127
ES 5284	SO 2813	SO 2814	-	-	2 x SR 2336	SR 1996	PS 4196	SZ 2450	SZ 2468	PS 4116	PS 4145	PS 4127
ES 5784	SO 2844	SO 2845	-	-	-	-	PS 4338	SZ 2450	SZ 2468	PS 4118	PS 4145	PS 4127
ES 5183	SO 2988	SO 2989	-	-	-	-	PS 4339	SZ 2450	SZ 2468	PS 4123	PS 4145	PS 4127
ES 5605	SO 2836	SO 2837	-	PS 4505	SR 2340	SR 1994	PS 4191	SZ 2450	SZ 2468	PS 4116	PS 4143	PS 4127
ES 5805	SO 2905	SO 2906	-	PS 4509	SR 2342	SR 1997	PS 4192	SZ 2450	SZ 2468	PS 4118	PS 4144	PS 4127
ES 5005	SO 2914	SO 2915	-	-	-	-	PS 4336	SZ 2450	SZ 2468	PS 4124	PS 4144	PS 4127
ES 5205	SO 2846	SO 2847	-	-	2 x SR 2340	SR 1996	PS 4196	SZ 2450	SZ 2468	PS 4116	PS 4145	PS 4127
ES 5905	SO 2853	SO 2854	-	-	-	-	PS 4339	SZ 2450	SZ 2468	PS 4123	PS 4145	PS 4127

# One Door Freestanding Enclosures



## NEMA Rated Carbon Steel Enclosures

Rittal Electromate NEMA 4 freestanding enclosures accept standard as well as rackmount electrical and electronic components. These enclosures are intended for indoor or outdoor applications to protect installed equipment against splashing water, seepage of water, falling or hose directed water, and external condensation.



Page NON 21

# One Door Modular Cabinets



## Freestanding Carbon Steel Modular Enclosures

Rittal Electromate modular NEMA 12 rated enclosures can be interconnected together to form a multi-door system for large control center applications. These enclosures are intended for indoor use to protect installed equipment against dust, dirt, oil and water.

### Configuration

- Continuously welded seams, finished smooth
- Oil resistant neoprene strip gasket
- Continuous stainless steel hinge with removable pin
- Hasp and staple for padlock
- Stainless steel captive clamps
- Removable heavy duty lifting eyes mounted to the top
- C-channels are welded to interior sides for optional mounting
- Print pocket included

### Technical Specifications

#### Material:

- Enclosure/door: 12 gauge carbon steel

#### Finish/color:

- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces – ANSI 61 grey inside and outside
- Optional mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... FST 16

### Configuration

- Continuously welded seams, finished smooth
- Body stiffener for added support
- Oil resistant neoprene strip gasket
- Continuous steel hinge with removable pin
- 3-point latch with padlockable black textured diecast zinc handle
- Removable heavy duty lifting eyes mounted to the top
- Removable 10 gauge carbon steel mounting panel included
- Print pocket included
- Both sides of enclosure are open with door hinged on left side
- Interlock is furnished for use with modular disconnect enclosures

### Technical Specifications

#### Material:

- Enclosure/door: 10 gauge carbon steel

#### Finish/color:

- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces - ANSI 61 grey outside and white inside
- Mounting panel: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... FST 16

Enclosure				Full Mounting Panel		Half Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Part No.	Panel size	
	H	W	D		H	W		H	W
E 72H3724FS	72.00	37.00	24.00	E 72P36F1	60.00	32.00	E 72P36F2	30.88	32.00

Accessories			
Part No.	Door stop kit	Touch-up paint	Window kit
E 72H3724FS	E DSTOPK	E L21	E PWK3523NF

Part No.	Enclosure			Mounting Panel		Usable depth
	Outside dimensions (inches)			Panel size		
	H	W	D	H	W	
E MOD723918	72.00	38.75	18.00	60.00	33.75	17.00
E MOD843918	84.00	38.75	18.00	72.00	33.75	17.00

Accessories					
Part No.	End plates	Flat plates	Gasket kits	Touch-up paint	Window kit
E MOD723918	E MOD72EPT	E MOD72FTPT	E MOD72GK	E L21	E PWK3523NF
E MOD843918	E MOD84EPT	E MOD84FTPT	E MOD84GK	E L21	E PWK3523NF

# TS8 Modular Freestanding Enclosures



## New Dimension In Enclosures

The revolutionary new Rittal TS8 represents a bold new dimension in enclosure design. This modular system boasts a strong, rigid 16-fold dual tubular frame. Multi-level mounting provides for optimum space efficiency and the symmetrical frame structure allows for complete assembly and configuration flexibility.



## Configuration

- Patented 16-fold frame with 30% more stability
- Symmetrical frame for optimal configurability
- UL Type 12/NEMA 1, 12, 13 protection
- Quick and easy backward compatibility with PS 4000 enclosures
- Two mounting levels for additional installation opportunities
- Integrated continuous electrical bonding for grounding and EMC protection
- Increased load capacity on side panels and doors
- 4 point locking system provides a perfect seal
- Collar/trough design to channel liquid away from gasket
- Reversible hinging door (single door only)
- Time saving quick assembly method through the use of the .98"/25 mm hole pattern
- Foamed-on gaskets
- Unlimited versatility through a variety of standard modular parts
- Off-the-shelf availability
- E-coat primer and powder paint provide superior corrosion resistance

## Technical Specifications

### Material:

- *Body/side panels:* 16 ga, sheet steel
- *Door:* 14 ga sheet steel
- *Frame:* 16 ga, 16-fold continuously welded sheet steel
- *Mounting panel:* zinc-plated, 11 ga/3 mm, sheet steel

### Finish/color:

- *Body, door(s):* E-coat primed, RAL 7044; textured, powder coated on the outside RAL 7032
- *Cable entry panels:* 3-part, zinc-plated, 16 ga/1.5 mm sheet steel

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Pages** ..... **FST 17-20**

Part No.	Enclosure			Mounting Panel								
	NEMA rating	Number of doors	Exact outside dimensions						Dimensions			
			inches			mm			inches		mm	
H	W	D	H	W	D	H	W	H	W	H	W	
8645600	1, 12, 13	1	55	24	20	1400	600	500	51.00	19.65	1296	499
8845600	1, 12, 13	1	55	32	20	1400	800	500	51.00	27.52	1296	699
8245600	1, 12, 13	2	55	48	20	1400	1200	500	51.00	43.27	1296	1099
8686600	1, 12, 13	1	71	24	24	1800	600	600	66.77	19.65	1696	499
8884600	1, 12, 13	1	71	32	16	1800	800	400	66.77	27.52	1696	699
8885600	1, 12, 13	1	71	32	20	1800	800	500	66.77	27.52	1696	699
8880600	1, 12, 13	2	71	32	20	1800	800	500	66.77	27.52	1696	699
8886600	1, 12, 13	1	71	32	24	1800	800	600	66.77	27.52	1696	699
8881600	1, 12, 13	2	71	32	24	1800	800	600	66.77	27.52	1696	699
8284600	1, 12, 13	2	71	48	16	1800	1200	400	66.77	43.27	1696	1099
8285600	1, 12, 13	2	71	48	20	1800	1200	500	66.77	43.27	1692	1099
8605600	1, 12, 13	1	79	24	20	2000	600	500	74.65	19.65	1896	499
8606600	1, 12, 13	1	79	24	24	2000	600	600	74.65	19.65	1896	499
8608600	1, 12, 13	1	79	24	32	2000	600	800	74.65	19.65	1896	499
8804600	1, 12, 13	1	79	32	16	2000	800	400	74.65	27.52	1896	699
8805600	1, 12, 13	1	79	32	20	2000	800	500	74.65	27.52	1896	699
8806600	1, 12, 13	1	79	32	24	2000	800	600	74.65	27.52	1896	699
8808600	1, 12, 13	1	79	32	32	2000	800	800	74.65	27.52	1896	699
8006600	1, 12, 13	2	79	40	24	2000	1000	600	74.65	35.39	1896	899
8205600	1, 12, 13	2	79	48	20	2000	1200	500	74.65	43.27	1896	1099
8206600	1, 12, 13	2	79	48	24	2000	1200	600	74.65	43.27	1896	1099
8626600	1, 12, 13	1	87	24	24	2200	600	600	82.52	19.65	2096	499
8826600	1, 12, 13	1	87	32	24	2200	800	600	82.52	27.52	2096	699
8226600	1, 12, 13	2	87	48	24	2200	1200	600	82.52	43.27	2096	1099

Part No.	Accessories										
	Components front/rear		Trim panels (sides)		Internal depth system chassis	External depth system chassis	Combination bracket kit (system chassis/system bar)	TS8 baying corner angles	TS8 baying vertical connector	Comfort handles	Side walls
	4" Height	8" Height	4" Height	8" Height							
8645600	8601600	8602600	8601050	8602050	8612050	8612150	8800330	8800430	8800500	8611010	8145200
8845600	8601800	8602800	8601050	8602050	8612050	8612150	8800330	8800430	8800500	8611010	8145200
8245600	8601200	8602200	8601050	8602050	8612050	8612150	8800330	8800430	8800500	8611010	8145200
8686600	8601600	8602600	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8186200
8884600	8601800	8602800	8601040	8602040	8612040	8612140	8800330	8800430	8800500	8611010	8184200
8885600	8601800	8602800	8601050	8602050	8612050	8612150	8800330	8800430	8800500	8611010	8185200
8880600	8601800	8602800	8601050	8602050	8612050	8612150	8800330	8800430	8800500	8611010	8185200
8886600	8601800	8602800	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8186200
8881600	8601800	8602800	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8186200
8284600	8601200	8602200	8601040	8602040	8612040	8612140	8800330	8800430	8800500	8611010	8184200
8285600	8601200	8602200	8601050	8602050	8612050	8612150	8800330	8800430	8800500	8611010	8185200
8605600	8601600	8602600	8601050	8602050	8612050	8612150	8800330	8800430	8800500	8611010	8105200
8606600	8601600	8602600	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8106200
8608600	8601600	8602600	8601080	8602080	8612080	8612180	8800330	8800430	8800500	8611010	8108200
8804600	8601800	8602800	8601040	8602040	8612040	8612140	8800330	8800430	8800500	8611010	8104200
8805600	8601800	8602800	8601050	8602050	8612050	8612150	8800330	8800430	8800500	8611010	8105200
8806600	8601800	8602800	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8106200
8808600	8601800	8602800	8601080	8602080	8612080	8612180	8800330	8800430	8800500	8611010	8108200
8006600	8601000	8602000	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8106200
8205600	8601200	8602200	8601050	8602050	8612050	8612150	8800330	8800430	8800500	8611010	8105200
8206600	8601200	8602200	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8106200
8626600	8601600	8602600	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8126200
8826600	8601800	8602800	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8126200
8226600	8601200	8602200	8601060	8602060	8612060	8612160	8800330	8800430	8800500	8611010	8126200



# PS Modular Freestanding Enclosures



## NEMA Rated Modular Enclosures

Rittal's PS Series freestanding enclosures are the world's leading modular enclosures. Based on Rittal's patented "Perfect System" technology, the PS Series offers a modular design for unlimited expandability and flexibility. Nine-fold, roll-formed sheet steel frame members are connected by solid steel corner pieces. The standard .98"/25 mm hole pattern on the inside of all frame members allows maximum space utilization. The corner pieces feature tapped holes for easy installation of mounting panels, cable collecting rails, and swing frames.



## Configuration

- NEMA 1, 12 and 13/IP 55 protection
- NEMA 4 upgrade available on single-door models
- Enclosures can easily be interconnected for multi-bay applications
- Patented 9-fold frame design
- Reversible hinging door (single door only)
- Maximum strength and stability through welded frame and corner piece design
- Time saving quick assembly method through the use of the .98"/25 mm hole pattern
- Foamed-on gaskets
- Unlimited versatility through a variety of standard modular parts
- Off-the-shelf availability
- E-coat primer and powder paint provide superior corrosion resistance
- Knife-edge design diverts liquid away from gasket
- 3-point locking system provides a perfect seal

## Technical Specifications

### Material:

- *Frame:* 9 fold, roll-formed, sheet steel
- *Door:* 14 ga/2 mm sheet steel
- *Rear wall:* 16 ga/1.5 mm sheet steel
- *Mounting panel:* 11 ga/3 mm hot-dipped galvanized zinc
- *Front frame:* aluminum (19" electronic)

### Finish:

- *Frame:* E-coat primed, RAL 7044 pebble grey
- *Door, rear wall and roof:* E-coat primed RAL 7044 light grey, powder painted RAL 7032 pebble grey
- *Mounting panel:* Type M

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Pages** ..... **FST 21-24**

Part No.	Approximate outside dimensions H"xW"xD"	NEMA rating	Number of doors	Enclosure						Mounting Panel			
				Exact outside dimensions						Dimensions			
				inches			mm			inches		mm	
<b>Standard PS Cabinets</b>													
466600	63x24x24	1, 12, 13	1	62.99	23.62	23.62	1600	600	600	58.90	19.65	1496	499
4684600	71x24x16	1, 12, 13	1	70.87	23.62	15.75	1800	600	400	66.77	19.65	1696	449
4686600	71x24x24	1, 12, 13	1	70.87	23.62	23.62	1800	600	600	66.77	19.65	1696	499
4688600	71x24x32	1, 12, 13	1	70.87	23.62	31.50	1800	600	800	66.77	19.65	1696	499
4884600	71x32x16	1, 12, 13	1	70.87	31.50	15.75	1800	800	400	66.77	27.52	1696	699
4885600	71x32x20	1, 12, 13	1	70.87	31.50	19.69	1800	800	500	66.77	27.52	1696	699
4886600	71x32x24	1, 12, 13	1	70.87	31.50	23.62	1800	800	600	66.77	27.52	1696	699
4084600	71x39x16	1, 12, 13	1	70.87	39.37	15.75	1800	1000	400	66.77	35.39	1696	899
4284600	71x47x16	1, 12, 13	2	70.87	47.24	15.75	1800	1200	400	66.77	43.27	1696	1099
4285600	71x47x20	1, 12, 13	2	70.87	47.24	19.69	1800	1200	500	66.77	43.27	1696	1099
4605600	79x24x20	1, 12, 13	1	78.74	23.62	19.69	2000	600	500	74.65	19.65	1896	499
4606600	79x24x24	1, 12, 13	1	78.74	23.62	23.62	2000	600	600	74.65	19.65	1896	499
4608600	79x24x32	1, 12, 13	1	78.74	23.62	31.50	2000	600	800	74.65	19.65	1896	499
4804600	79x32x16	1, 12, 13	1	78.74	31.50	15.75	2000	800	400	74.65	27.52	1896	699
4805600	79x32x20	1, 12, 13	1	78.74	31.50	19.69	2000	800	500	74.65	27.52	1896	699
4806600	79x32x24	1, 12, 13	1	78.74	31.50	23.62	2000	800	600	74.65	27.52	1896	699
4808600	79x32x32	1, 12, 13	1	78.74	31.50	31.50	2000	800	800	74.65	27.52	1896	699
4005600	79x39x20	1, 12, 13	2	78.74	39.37	19.69	2000	1000	500	74.65	35.39	1896	899
4006600	79x39x24	1, 12, 13	2	78.74	39.37	23.62	2000	1000	600	74.65	35.39	1896	899
4205600	79x47x20	1, 12, 13	2	78.74	47.24	19.69	2000	1200	500	74.65	43.27	1896	1099
4206600	79x47x24	1, 12, 13	2	78.74	47.24	23.62	2000	1200	600	74.65	43.27	1896	1099
4626600	87x24x24	1, 12, 13	1	86.61	23.62	23.62	2200	600	600	82.52	19.65	2096	499
4826600	87x32x24	1, 12, 13	1	86.61	31.50	23.62	2200	800	600	82.52	27.52	2096	699
4828600	87x32x32	1, 12, 13	1	86.61	31.50	31.50	2200	800	800	82.52	27.52	2096	699
4060600	87x39x24	1, 12, 13	1	86.61	39.37	23.62	2200	1000	600	82.52	35.39	2096	899
4226600	87x47x24	1, 12, 13	2	86.61	47.24	23.62	2200	1200	600	82.52	43.27	2096	1099
<b>19" Electronic PS Cabinets</b>													
4438210	78x24x32	1	1	78.74	23.62	31.89	2000	600	810	-	-	-	-

Part No.	Side wall (1 pair)	Accessories					
		Cable base		Interconnecting		Print pocket	Fluorescent light
		4" high	8" high	Brackets .500	Pins		
<b>Standard PS Cabinets</b>							
4666000	4166200	2813200	2814200	4582000	4580000	4116000	9968111
4684600	4184200	2804200	2805200	4582000	4580000	4116000	9968111
4686600	4186200	2813200	2814200	4582000	4580000	4116000	9968111
4688600	4188200	2846200	2847200	4582000	4580000	4116000	9968111
4884600	4184200	2823200	2824200	4582000	4580000	4118000	9968112
4885600	4185200	2829200	2830200	4582000	4580000	4118000	9968112
4886600	4186200	2833200	2834200	4582000	4580000	4118000	9968112
4084600	4184200	2909200	2910200	4582000	4580000	-	9968112
4284600	4184200	2836200	2837200	4582000	4580000	4116000	9968112
4285600	4185200	2839200	2840200	4582000	4580000	4116000	9968112
4605600	4105200	2807200	2808200	4582000	4580000	4116000	9968111
4606600	4106200	2813200	2814200	4582000	4580000	4116000	9968111
4608600	4108200	2846200	2847200	4582000	4580000	4116000	9968111
4804600	4104200	2823200	2824200	4582000	4580000	4118000	9968112
4805600	4105200	2829200	2830200	4582000	4580000	4118000	9968112
4806600	4106200	2833200	2834200	4582000	4580000	4118000	9968112
4808600	4108200	2848200	2849200	4582000	4580000	4118000	9968112
4005600	4105200	2914200	2915200	4582000	4580000	-	9968112
4006600	4106200	2916200	2917200	4582000	4580000	-	9968112
4205600	4105200	2839200	2840200	4582000	4580000	4116000	9968112
4206600	4106200	2844200	2845200	4582000	4580000	4116000	9968112
4626600	4125200	2813200	2814200	4582000	4580000	4116000	9968111
4826600	4126200	2833200	2834200	4582000	4580000	4118000	9968112
4828600	4128200	2848200	2849200	4582000	4580000	4118000	9968112
4060600	4126200	2917200	2918200	4582000	4580000	-	9968112
4226600	4126200	2844200	2845200	4582000	4580000	4116000	9968112
<b>19" Electronic PS Cabinets</b>							
4438210	4108000	2846200	2847200	4582000	4580000	-	-

# PS Network Enclosures



## PS Network Cabinets

The Rittal freestanding NEMA 12 network cabinets are based on Rittal's patented PS Series technology, featuring a standard installation hole system for maximum space utilization. The cabinet's rugged construction offers high stability as well as high-load bearing capacity. Components are visible through the viewing door and are fully accessible from all sides through front/rear doors and removable sidewalls. Rittal's PS cabinets are available in our most popular sizes with standard accessories.

### Configuration

- Smoked polycarbonate front viewing door
- Steel rear door
- Removable locking sidewalls
- Ergoform-S handles with pushbutton lock inserts, front and rear
- Removable solid roof
- Bottom cable entry panels
- 19" DK-PS rails, front and rear
- 1 set of system chassis
- Mounting brackets, top and bottom
- 50 captive nuts
- 100 mounting screws

### Technical Specifications:

#### Material:

- *Frame:* 9 fold, roll-formed, sheet steel
- *Door:* 14 ga/2 mm sheet steel
- *Rear wall:* 16 ga/1.5 mm sheet steel

#### Finish:

- RAL 7032 Cabinets
- *Frame:* E-coat primed, RAL 7044 light grey
- *Door, rear wall and roof:* E-coat primed, RAL 7044 light grey, powder painted RAL 7032 pebble grey
- RAL 9005 Cabinets
- *Frame:* E-coat primed, RAL 7044 light grey, oversprayed, RAL 9005 black
- *Door, rear wall and roof:* E-coat primed RAL 7044 light grey, wet painted RAL 9005 black

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **FST 95**

Enclosure								
Part No. With Sidewalls RAL 7032 Pebble Grey	Part No. Without Sidewalls RAL 7032 Pebble Grey	Part No. With Sidewalls RAL 9005 Black	Height/U		Width		Depth	
			inches	mm	inches	mm	inches	mm
9967600	9967601	-	48	24	23.6	600	23.6	600
9967602	9967603	-	48	24	23.6	600	31.5	800
9967604	9967605	-	48	24	31.5	800	31.5	800
9967606	9967607	-	72	36	23.6	600	23.6	600
9967608	9967609	-	72	36	23.6	600	31.5	800
9967610	9967611	-	72	36	31.5	800	31.5	800
9967612	9967613	9967695	78	42	23.6	600	23.6	600
9967614	9967615	9967694	78	42	23.6	600	31.5	800
9967616	9967617	9967696	78	42	31.5	800	31.5	800
9967618	9967619	9967697	86	47	23.6	600	23.6	600
9967620	9967621	-	86	47	23.6	600	31.5	800
9967622	9967623	-	86	47	31.5	800	31.5	800

**Note:** Multiple cabinets can be bayed together using Part No. 4580000, 4581000 or 4582000. Remember to order one cabinet with sidewalls per row of cabinets and the rest without.

Accessories						
Part No. With Sidewalls	Part No. Without Sidewalls	Cable entry roof	Raised vented roof	19" rack mounted shelf	Telescopic slides	8 outlet frame mounted power strip
<b>RAL 7032 Pebble Grey</b>						
9967600	9967601	7566200	7366200	7144000	7061000	7724000
9967602	9967603	7568200	7368200	7145000	7081000	7724000
9967604	9967605	7588200	7388200	7145000	7081000	7724000
9967606	9967607	7566200	7366200	7144000	7061000	7724000
9967608	9967609	7568200	7368200	7145000	7081000	7724000
9967610	9967611	7588200	7388200	7145000	7081000	7724000
9967612	9967613	7566200	7366200	7144000	7061000	7724000
9967614	9967615	7568200	7368200	7145000	7081000	7724000
9967616	9967617	7588200	7388200	7145000	7081000	7724000
9967618	9967619	7566200	7366200	7144000	7061000	7724000
9967620	9967621	7568200	7368200	7145000	7081000	7724000
9967622	9967623	7588200	7388200	7145000	7081000	7724000

Accessories					
Part No. With Sidewalls	Cable entry roof	Raised vented roof	19" rack mounted shelf	Telescopic slides	8 outlet frame mounted power strip
<b>RAL 9005 Black</b>					
9967694	9967740	9967841	9968422	-	9968339
9967695	9967838	9967840	9968422	-	9968339
9967696	9967703	9967842	9968422	-	9968339
9967697	9967740	9967841	9968422	-	9968339

# One/Two Door Freestanding Cabinets



## Single Access Enclosures

Rittal Electromate NEMA rated freestanding enclosures accept standard as well as rackmount electrical and electronic components. These enclosures are intended for indoor applications to protect installed equipment against dust, dirt, oil and water.



Page **NON 22**

## Configuration

- Standard types are available:
  - Type "FS" – one door, single access
  - Type "FSDD" – two door, single access
- Continuously welded seams, finished smooth
- Body stiffener for added support
- Oil resistant neoprene strip gasket
- Continuous steel hinge with removable pin
- 3-point latch with padlockable black textured diecast zinc handle
- Removable heavy duty lifting eyes mounted to the top
- C-channels are welded to interior sides for optional mounting
- Print pocket included

## Technical Specifications

### Material:

- All steel parts: 12 gauge carbon steel
- Back of FSDD: 10 gauge carbon steel

### Finish/color:

- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces, ANSI 61 grey outside and white inside
- Optional mounting panels: painted white

## Protection Ratings

NEMA Type  1  4  4X  12  13

## Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

## Technical Drawings

Page ..... **FST 26**

Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Door size		Maximum usable depth panel installed	Part No.	Description	Panel size	
	H	W	D	H	W				H	W
<b>One Door, Single Access</b>										
E 602418FS	60.00	24.00	18.00	50.25	22.22	17.63	E 60P24F1	FULL PANEL	48.00	20.00
E 722418FS	72.00	24.00	18.00	62.25	22.22	17.63	E 72P24F1	FULL PANEL	24.88	20.00
E 723018FS	72.00	30.00	18.00	62.25	28.22	17.63	E 72P30F1	FULL PANEL	60.00	20.00
E 723618FS	72.00	36.00	18.00	62.25	34.22	17.63	E 72P36F1	FULL PANEL	30.88	20.00
E 903620FS	90.00	36.00	20.00	80.25	34.22	19.63	E 90P36F1	FULL PANEL	39.88	20.00
E 722424FS	72.00	24.00	24.00	62.25	22.22	23.63	E 72P24F1	FULL PANEL	30.88	26.00
E 723624FS	72.00	36.00	24.00	62.25	34.22	23.63	E 72P36F1	FULL PANEL	24.88	32.00
E 903624FS	90.00	36.00	24.00	80.25	34.22	23.63	E 90P36F1	FULL PANEL	60.00	32.00
<b>Two Door, Single Access</b>										
E 724818FSDD	72.00	48.00	18.00	-	-	15.13	E 72P48F1	FULL PANEL	60.00	44.00
E 907220FSDD	90.00	72.00	20.00	-	-	17.13	E 90P72F1	FULL PANEL	60.00	56.00
E 724824FSDD	72.00	48.00	24.00	-	-	21.13	E 72P48F1	FULL PANEL	30.88	56.00
E 727224FSDD	72.00	72.00	24.00	-	-	21.13	E 72P72F1	FULL PANEL	30.88	68.00
E 907224FSDD	90.00	72.00	24.00	-	-	21.13	E 90P72F1	FULL PANEL	78.00	68.00

\* Half panels also available.

Accessories			
Part No.	Door stop kit	Touch-up paint	Window kit
<b>One Door, Single Access</b>			
E 602418FS	E DSTOPK	E L21	E PWK3523NF
E 722418FS	E DSTOPK	E L21	E PWK3523NF
E 723018FS	E DSTOPK	E L21	E PWK3523NF
E 723618FS	E DSTOPK	E L21	E PWK3523NF
E 903620FS	E DSTOPK	E L21	E PWK3523NF
E 722424FS	E DSTOPK	E L21	E PWK3523NF
E 723624FS	E DSTOPK	E L21	E PWK3523NF
E 903624FS	E DSTOPK	E L21	E PWK3523NF
<b>Two Door, Single Access</b>			
E 724818FSDD	E DSTOPK	E L21	E PWK3523NF
E 907220FSDD	E DSTOPK	E L21	E PWK3523NF
E 724824FSDD	E DSTOPK	E L21	E PWK3523NF
E 727224FSDD	E DSTOPK	E L21	E PWK3523NF
E 907224FSDD	E DSTOPK	E L21	E PWK3523NF



# Two Door Floor Mount Enclosures

## NEMA 12 and 4 Carbon Steel Cabinets

These NEMA 4 rated floor mount enclosures are designed for indoor or outdoor use to protect electrical and electronic equipment against splashing water, seepage of water, falling or hose directed water and external condensation.



NEMA 12

NEMA 4



NEMA 12



NEMA 4

### Configuration

- Continuously welded seams, finished smooth
- Gasketed overlapping doors
- Body stiffener for added support
- 3-point latching with padlockable black textured diecast zinc handle (NEMA 12 only)
- Oil resistant neoprene strip gasket
- Continuous stainless steel heavy duty hinge with removable pin
- Mounting panel provisions installed
- Removable heavy duty lifting eyes
- 12" floor stands are welded to enclosure
- Print pocket included
- Removable center post (NEMA 4 only)
- Hasp and staple for padlocking (NEMA 4 only)

### Technical Specifications:

#### NEMA 12 Material:

- Enclosure/door: 12 gauge carbon steel

#### NEMA 4 Material:

- Carbon steel
- Body: 12 gauge
- Back: 10 gauge for H or W ≥ 72"

#### Finish/color:

- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces, ANSI 61 grey outside and white inside
- Optional mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... FST 27

NEMA 12 Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 604808	60.00	48.00	8.00	E 60P48	56.00	44.00	8.00
E 604810	60.00	48.00	10.00	E 60P48	56.00	44.00	10.00
E 606010	60.00	60.00	10.00	E 60P60	56.00	56.00	10.00
E 726010	72.00	60.00	10.00	E 72P60	68.00	56.00	10.00
E 727210	72.00	72.00	10.00	E 72P72	68.00	68.00	10.00
E 604812	60.00	48.00	12.00	E 60P48	56.00	44.00	12.00
E 606012	60.00	60.00	12.00	E 60P60	56.00	56.00	12.00
E 726012	72.00	60.00	12.00	E 72P60	68.00	56.00	12.00
E 727212	72.00	72.00	12.00	E 72P72	68.00	68.00	12.00
E 604816	60.00	48.00	16.00	E 60P48	56.00	44.00	16.00
E 606016	60.00	60.00	16.00	E 60P60	56.00	56.00	16.00
E 726016	72.00	60.00	16.00	E 72P60	68.00	56.00	16.00
E 727216	72.00	72.00	16.00	E 72P72	68.00	68.00	16.00
E 727220	72.00	72.00	20.00	E 72P72	68.00	68.00	20.00

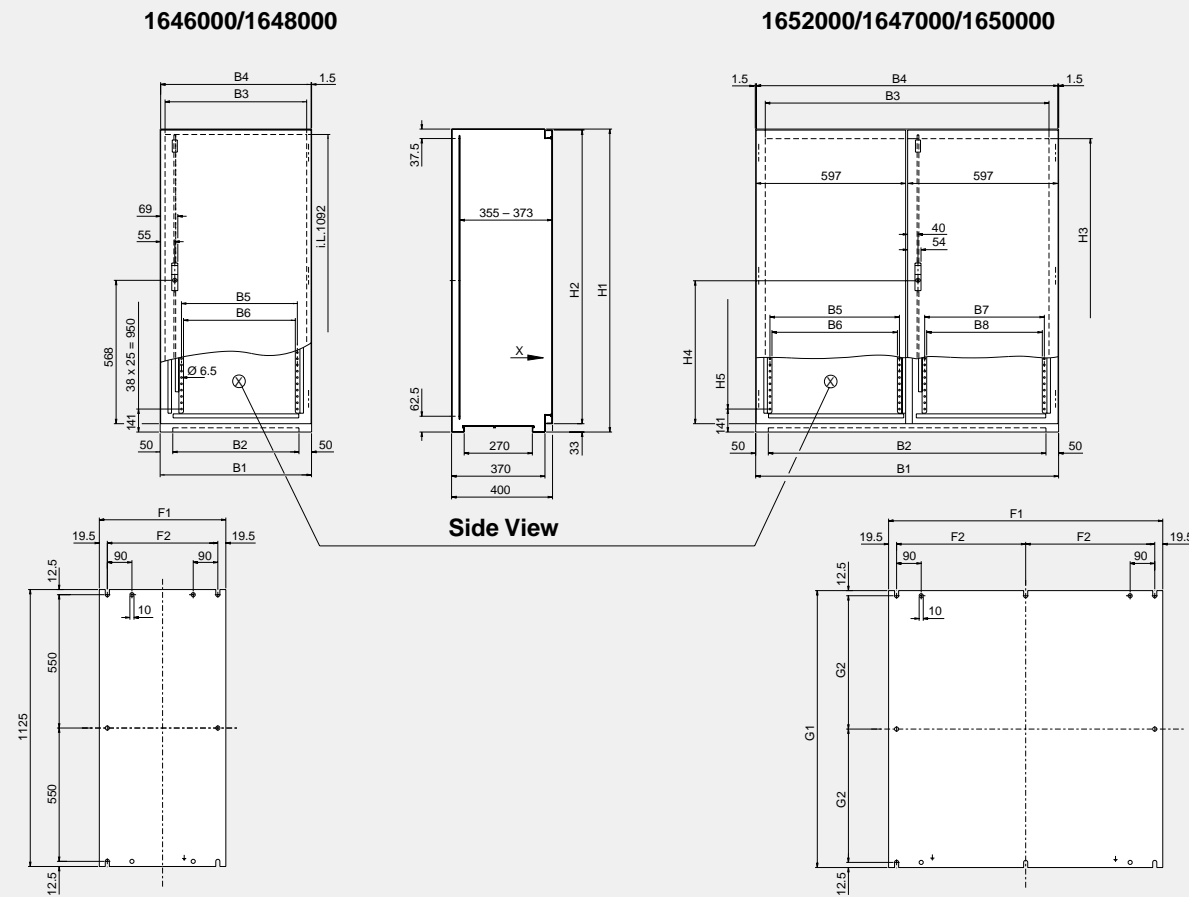
NEMA 4 Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 74H72J	74.00	72.00	24.00	E 72P72	68.00	68.00	24.00

Accessories				
Part No.	Drip shield kit	Door stop kit	Window kit	Touch-up paint
E 604808	E DK48	E DSTOPK	E PWK3523NF	E L21
E 604810	E DK48	E DSTOPK	E PWK3523NF	E L21
E 606010	E DK60	E DSTOPK	E PWK3523NF	E L21
E 726010	E DK60	E DSTOPK	E PWK3523NF	E L21
E 727210	E DK72	E DSTOPK	E PWK3523NF	E L21
E 604812	E DK48	E DSTOPK	E PWK3523NF	E L21
E 606012	E DK60	E DSTOPK	E PWK3523NF	E L21
E 726012	E DK60	E DSTOPK	E PWK3523NF	E L21
E 727212	E DK72	E DSTOPK	E PWK3523NF	E L21
E 604816	E DK48	E DSTOPK	E PWK3523NF	E L21
E 606016	E DK60	E DSTOPK	E PWK3523NF	E L21
E 726016	E DK60	E DSTOPK	E PWK3523NF	E L21
E 727216	E DK72	E DSTOPK	E PWK3523NF	E L21
E 727220	E DK72	E DSTOPK	E PWK3523NF	E L21

Accessories				
Part No.	Door stop kit	Touch-up paint	Window kit	Fast operating clamp
E 74H72J	E DSTOPK	E L21	E PWK3523NF	E FOC412SS



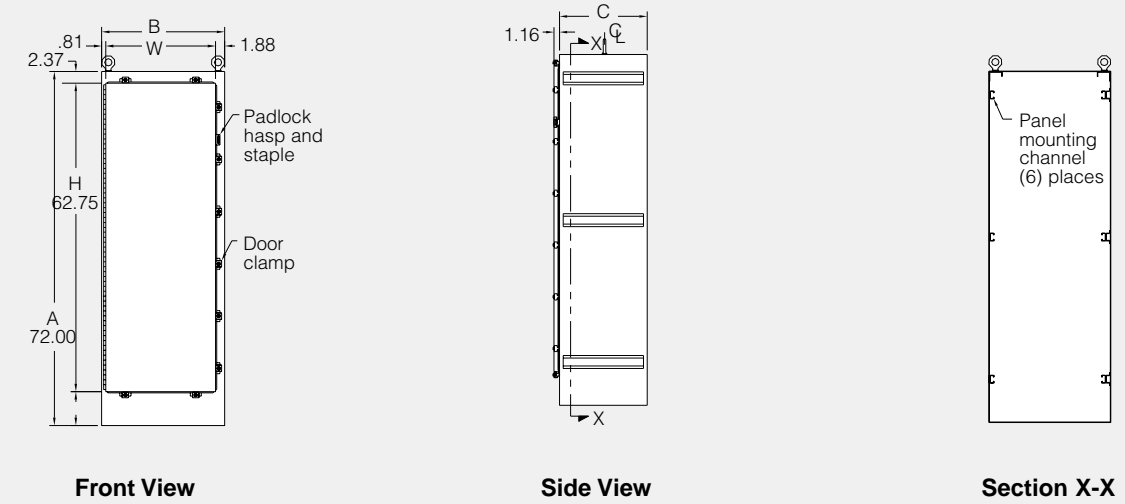
### Technical Specifications AK Freestanding Enclosures



Part No.	Number of doors	Enclosure						Mounting Panel			
		Exact outside dimensions						Dimensions			
		inches			mm			inches		mm	
H	W	D	H	W	D	H	W	H	W		
1646600	1	47.24	23.62	15.75	1200	600	400	44.29	20.24	1125	514
1648600	1	47.24	31.50	15.75	1200	800	400	44.29	28.11	1125	714
1650600	2	47.24	39.37	15.75	1200	1000	400	44.29	35.39	1125	914
1652600	2	47.24	47.24	15.75	1200	1200	400	44.29	43.86	1125	1114
1647600	2	55.12	39.37	15.75	1400	1000	400	52.17	35.39	1325	914

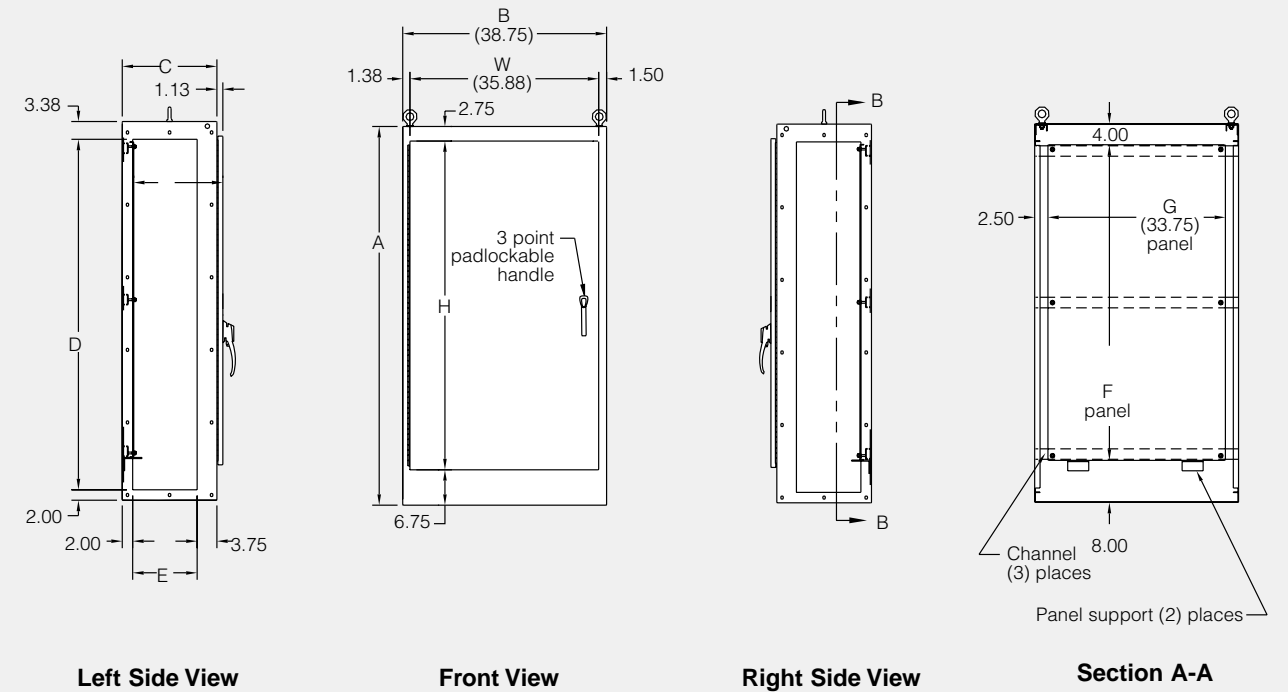
Part No.	Detailed Dimensions																
	B1	B2	B3	B4	B5	B6	B7	B8	F1	F2	G1	G2	H1	H2	H3	H4	H5
1646600	600	500	524	597	459	443	-	-	514	475	-	-	1200	1166	-	-	-
1648600	800	700	724	797	659	643	-	-	714	675	-	-	1200	1166	-	-	-
1650600	1000	900	924	997	413	397	377	361	914	437.5	1125	550	1200	1166	1092	568	38 x 28 = 950
1652600	1200	1100	1124	1197	513	497	477	461	1114	538	1125	550	1200	1166	1092	568	38 x 28 = 950
1647600	1000	900	924	997	413	397	377	361	914	437.5	1325	650	1400	1366	1292	668	46 x 25 = 1160

### Technical Specifications One Door Freestanding Enclosures



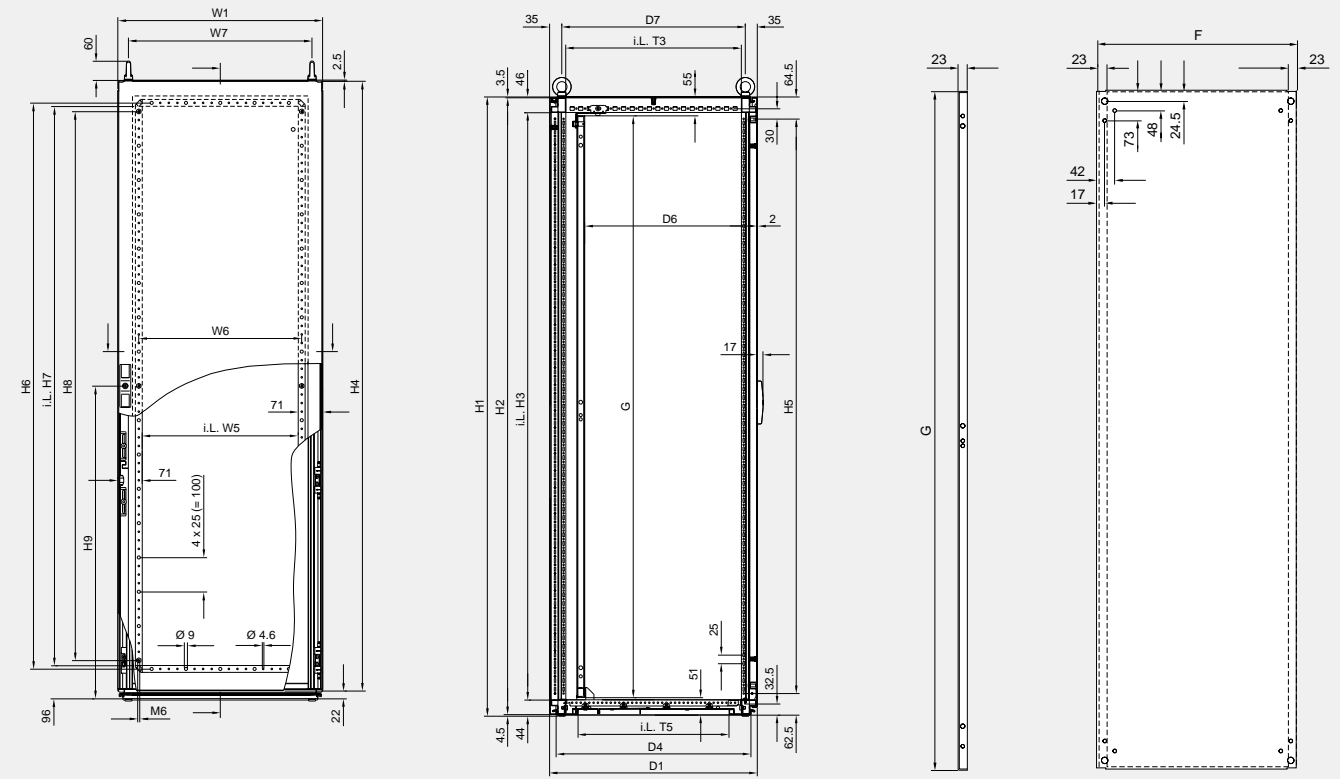
Part No.	Enclosure					Full Mounting Panel		Half Mounting Panel			
	Outside dimensions (inches)			Door size		Panel size		Panel size			
	H	W	D	H	W	E	F	E	F		
E 72H3724FS	72.00	37.00	24.00	62.75	34.31	E 72P36F1	60.00	32.00	E 72P36F2	30.88	32.00

### One Door Modular Cabinets



Part No.	Enclosure					Mounting Panel		
	Outside dimensions (inches)			Door size		Panel size		Usable depth
	H	W	D	H	W	F	G	J
E MOD723918	72.00	38.75	18.00	62.50	35.88	60.00	33.75	17.00
E MOD843918	84.00	38.75	18.00	74.50	35.88	72.00	33.75	17.00

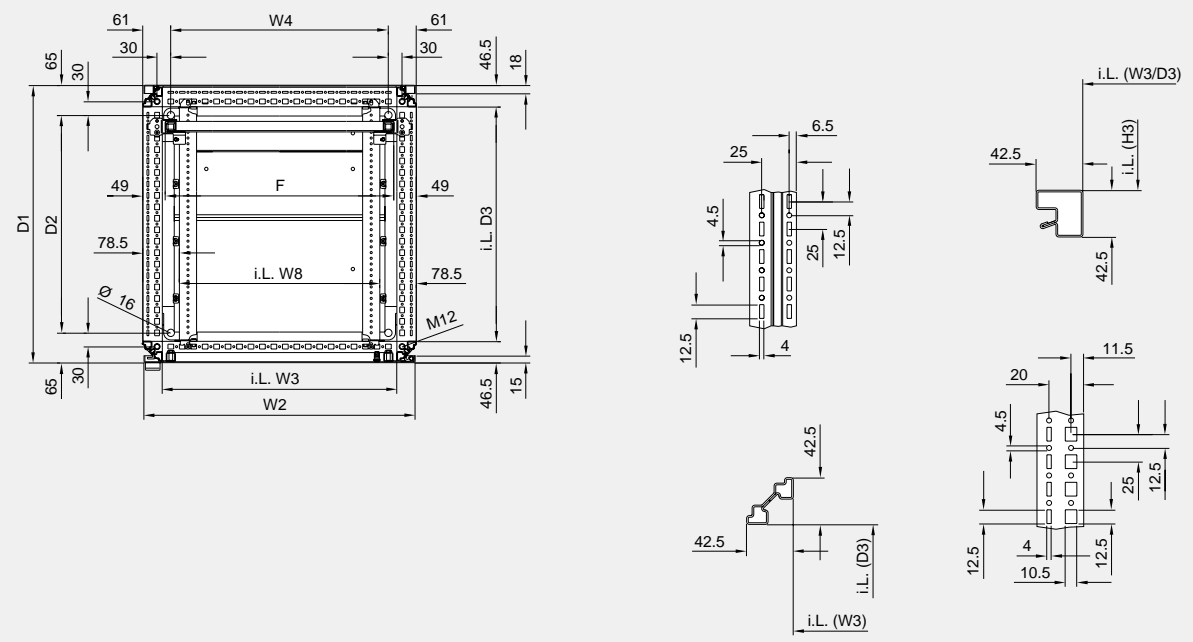
**Technical Specifications**  
**TS8 Modular Freestanding Enclosures – One Door**



- Enclosure**  
H1 = total height  
H2 = height of rear wall  
H3 = available space between frame members  
H4 = height of door  
H5 = span of installation holes  
H6 = distance between installation holes on top and bottom members of door frame  
H7 = available space between top and bottom members of door frame  
H8 = distance between door frame fasteners  
H9 = distance between bottom and center of lock
- W1 = overall or total width  
W2 = width of door  
W3 = available space between frame members  
W4 = span of installation holes/distance between cable base mounting holes  
W5 = available space between vertical members of door frame  
W6 = distance between installation holes on vertical members of door frame  
W7 = distance between eye bolts  
W8 = available space in bottom opening
- D1 = total depth  
D2 = span of installation holes/distance between cable base mounting holes  
D3 = available space between vertical frame members  
D4 = depth of bottom of frame  
D5 = available space in bottom opening  
D6 = possible mounting depth (construction of mounting panel) in 25 mm raster depth adjustable  
D7 = distance between eye bolts
- Mounting Panel**  
F = overall width  
G = overall height

Part No.	Enclosure								
	Height dimensions								
	H1	H2	H3	H4	H5	H6	H7	H8	H9
8645600	1405	1397	1312	1377.5	1275	1250	1230	1200	711
8845600	1405	1397	1312	1377.5	1275	1250	1230	1200	711
8686600	1805	1797	1712	1777.5	1675	1650	1630	1600	911
8884600	1805	1797	1712	1777.5	1675	1650	1630	1600	911
8885600	1805	1797	1712	1777.5	1675	1650	1630	1600	911
8886600	1805	1797	1712	1777.5	1675	1650	1630	1600	911
8605600	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
8606600	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
8608600	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
8804600	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
8805600	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
8806600	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
8808600	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
8626600	2205	2197	2112	2177.5	2075	2050	2030	2000	1111
8826600	2205	2197	2112	2177.5	2075	2050	2030	2000	1111

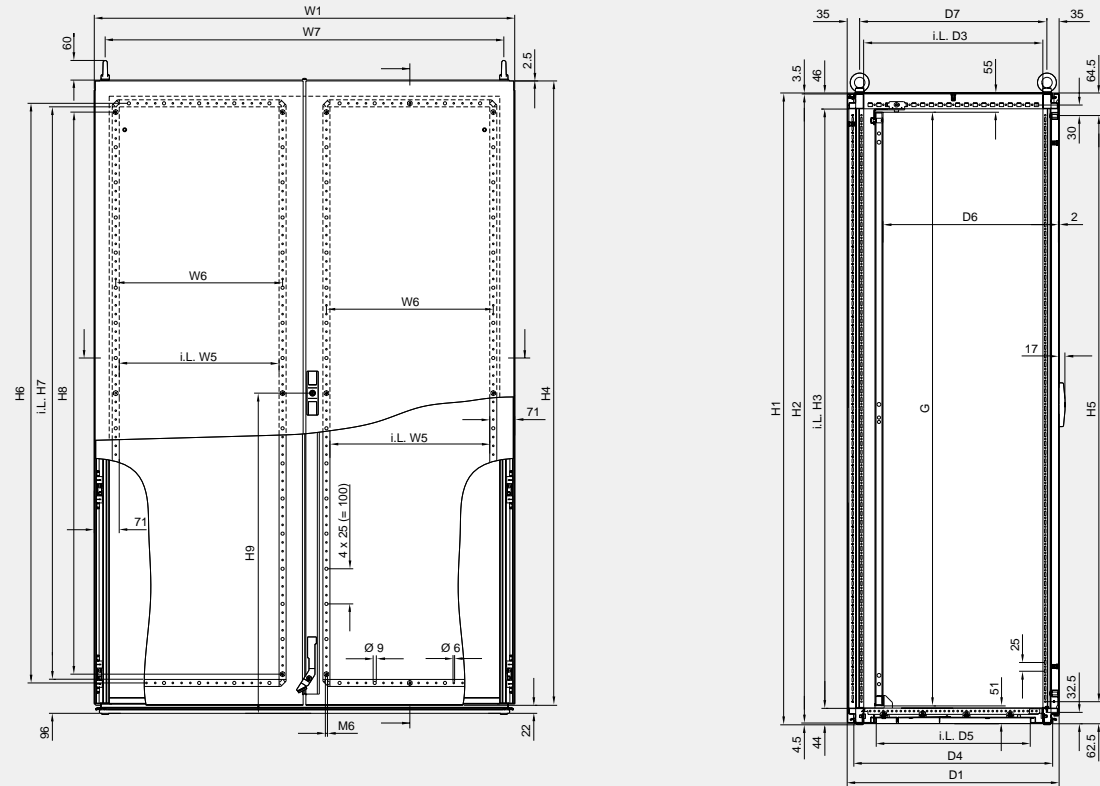
**Technical Specifications**  
**TS8 Modular Freestanding Enclosures – One Door**



Part No.	Enclosure													Mounting Panel			
	Width dimensions								Depth dimensions					Mounting Panel			
	W1	W2	W3	W4	W5	W6	W7	W8	D1	D2	D3	D4	D5	D6	D7	F	G
8645600	597	592	512	475	455	475	535	440	505	375	412	468	340	130-455	435	499	1296
8845600	797	792	712	675	655	675	735	640	505	375	412	468	340	130-455	435	499	1296
8686600	597	592	512	475	455	475	535	440	605	475	512	568	440	130-555	535	499	1696
8884600	797	792	712	675	655	675	735	640	405	275	312	368	240	130-355	335	699	1696
8885600	797	792	712	675	655	675	735	640	505	375	412	468	340	130-455	435	699	1696
8886600	797	792	712	675	655	675	735	640	605	475	512	568	440	130-555	535	699	1696
8605600	597	592	512	475	455	475	535	440	505	375	412	468	340	130-455	435	499	1869
8606600	597	592	512	475	455	475	535	440	605	475	512	568	440	130-555	535	499	1896
8608600	597	592	512	475	455	475	535	440	805	675	712	768	640	130-755	735	499	1896
8804600	797	792	712	675	655	675	735	640	405	275	312	368	240	130-355	335	699	1896
8805600	797	792	712	675	655	675	735	640	505	375	412	468	340	130-455	435	699	1896
8806600	797	792	712	675	655	675	735	640	605	475	512	568	440	130-555	535	699	1896
8808600	797	792	712	675	655	675	735	640	805	675	712	768	640	130-755	735	699	1896
8626600	597	592	512	475	455	475	535	440	605	475	512	568	440	130-555	535	499	2096
8826600	797	792	712	675	655	675	735	640	605	475	512	568	440	130-555	535	699	2096

### Technical Specifications

#### TS8 Modular Freestanding Enclosures – Two Door



**Enclosure**

- H1 = total height
- H2 = height of rear wall
- H3 = available space between frame members
- H4 = height of door
- H5 = span of installation holes
- H6 = distance between installation holes on top and bottom members of door frame
- H7 = available space between top and bottom members of door frame
- H8 = distance between door frame fasteners
- H9 = distance between bottom and center of lock

- W1 = overall or total width
- W2 = width of door
- W3 = available space between frame members
- W4 = span of installation holes/distance between cable base mounting holes
- W5 = available space between vertical members of door frame
- W6 = distance between installation holes on vertical members of door frame
- W7 = distance between eye bolts
- W8 = available space in bottom opening

- D1 = total depth
- D2 = span of installation holes/distance between cable base mounting holes
- D3 = available space between vertical frame members
- D4 = depth of bottom of frame
- D5 = available space in bottom opening
- D6 = possible mounting depth (construction of mounting panel) in 25 mm raster depth adjustable
- D7 = distance between eye bolts

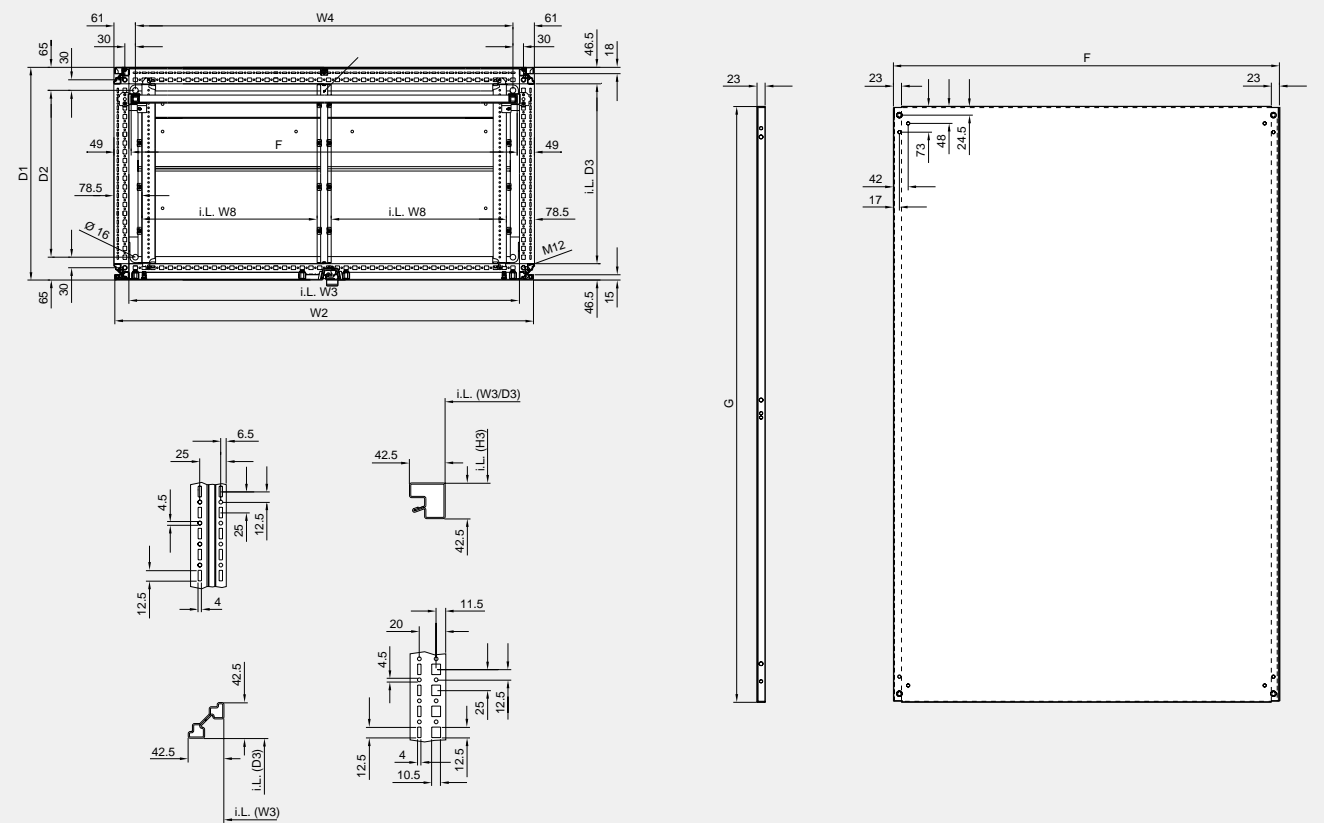
**Mounting Panel**

- F = overall width
- G = overall height

Part No.	Enclosure								
	Height dimensions								
	H1	H2	H3	H4	H5	H6	H7	H8	H9
<b>8245600</b>	1405	1397	1312	1377.5	1275	1250	1230	1200	711
<b>8880600</b>	1805	1797	1712	1777.5	1675	1650	1630	1600	911
<b>8881600</b>	1805	1797	1712	1777.5	1675	1650	1630	1600	911
<b>8284600</b>	1805	1797	1712	1777.5	1675	1650	1630	1600	911
<b>8285600</b>	1805	1797	1712	1777.5	1675	1650	1630	1600	911
<b>8006600</b>	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
<b>8205600</b>	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
<b>8206600</b>	2005	1997	1912	1977.5	1875	1850	1830	1800	1011
<b>8226600</b>	2205	2197	2112	2177.5	2075	2050	2030	2000	1111

### Technical Specifications

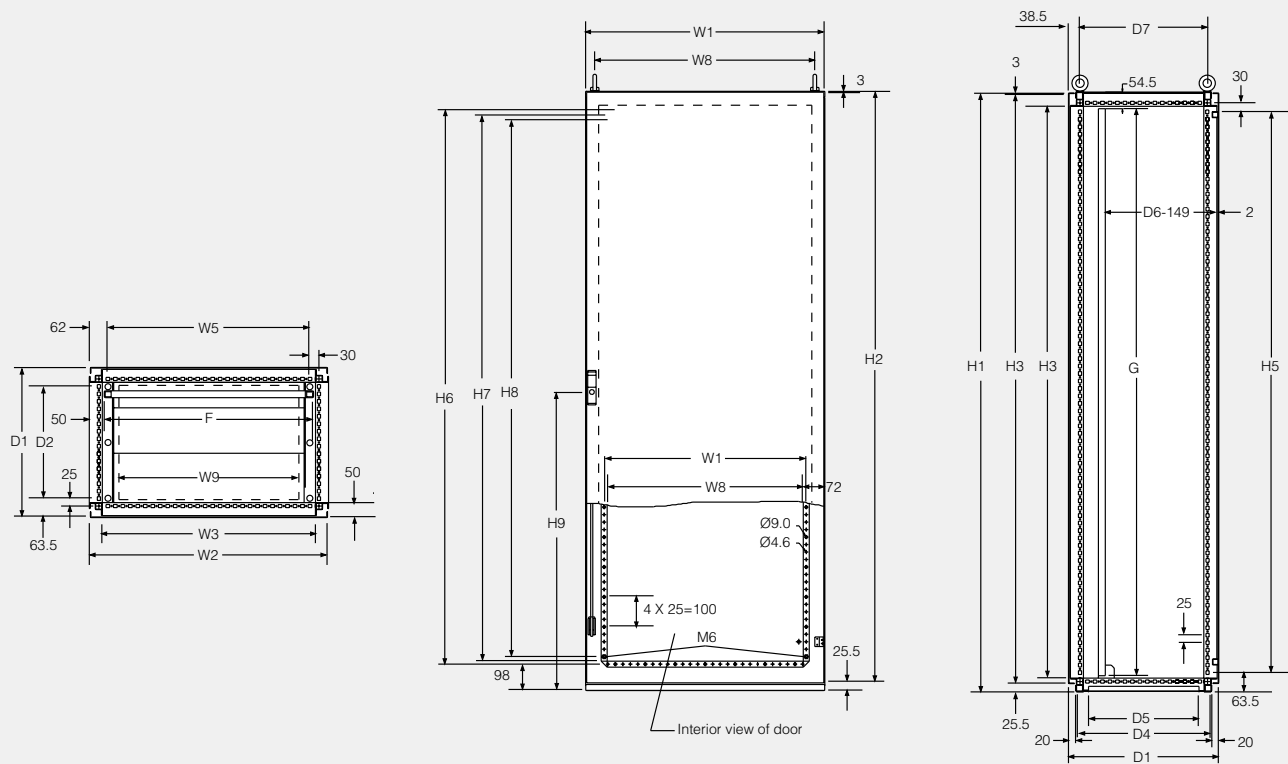
#### TS8 Modular Freestanding Enclosures – Two Door



Part No.	Enclosure												Mounting Panel				
	Width dimensions								Depth dimensions				Mounting Panel				
	W1	W2	W3	W4	W5	W6	W7	W8	D1	D2	D3	D4	D5	D6	D7	F	G
<b>8245600</b>	1197	1192	1112	1075	455	475	1135	500	505	375	412	468	340	130-455	435	1099	1296
<b>8880600</b>	797	792	712	675	255	275	735	640	505	375	412	468	340	130-455	435	699	1696
<b>8881600</b>	797	792	712	675	255	275	735	640	605	475	512	568	440	130-555	535	699	1696
<b>8284600</b>	1197	1192	1112	1075	455	475	1135	500	405	275	312	368	240	130-555	335	1099	1696
<b>8285600</b>	1197	1192	1112	1075	455	475	1135	500	505	375	412	468	340	130-455	435	1099	1696
<b>8006600</b>	997	992	912	875	355	375	935	400	605	475	512	568	440	130-455	535	899	1896
<b>8205600</b>	1197	1192	1112	1075	455	475	1135	500	505	375	412	468	340	130-455	435	1099	1896
<b>8206600</b>	1197	1192	1112	1075	455	475	1135	500	605	475	512	568	440	130-555	535	1099	1896
<b>8226600</b>	1197	1192	1112	1075	455	475	1135	500	605	475	512	568	440	130-555	535	1099	2096

### Technical Specifications

#### PS Modular Freestanding Enclosures – One Door



#### Enclosure

- H1 = total height
- H2 = height of rear wall and door
- H3 = available space between frame members
- H5 = span of installation holes
- H6 = distance between installation holes on top and bottom members of door frame
- H7 = available space between top and bottom members of door frame
- H8 = distance between door frame fasteners
- H9 = distance between bottom and center of lock
- W1 = available space between frame members
- W2 = width of door
- W3 = overall or total width
- W5 = span of installation holes/distance between cable base mounting holes
- W6 = available space between vertical members of door frame
- W7 = distance between installation holes on vertical members of door frame
- W8 = distance between eye bolts
- W9 = available space in bottom opening
- D1 = total depth
- D2 = span of installation holes/distance between cable base mounting holes
- D3 = available space between vertical frame members
- D4 = depth of bottom of frame
- D5 = available space in bottom opening
- D6 = area where mounting panel can be installed
- D7 = distance between eye bolts

#### Mounting panel

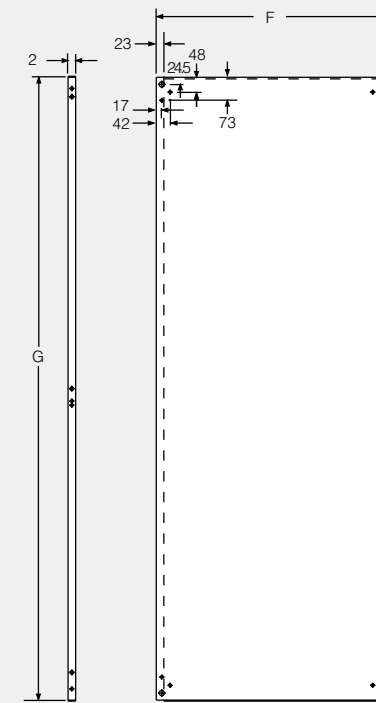
- F = overall width
- G = overall height

Part No.	Enclosure							
	Height dimensions							
	H1	H2	H3	H5	H6	H7	H8	H9
<b>4666600</b>	1610	1575	1512	1475	1450	1430	1400	798
<b>4684600</b>	1810	1775	1712	1675	1650	1630	1600	898
<b>4686600</b>	1810	1775	1712	1675	1650	1630	1600	898
<b>4688600</b>	1810	1775	1712	1675	1650	1630	1600	898
<b>4884600</b>	1810	1775	1712	1675	1650	1630	1600	898
<b>4885600</b>	1810	1775	1712	1675	1650	1630	1600	898
<b>4886600</b>	1810	1775	1712	1675	1650	1630	1600	898
<b>4084600</b>	1810	1775	1712	1675	1650	1630	1600	898
<b>4605600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4606600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4608600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4804600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4805600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4806600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4808600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4626600</b>	2210	2175	2112	2075	2050	2030	2000	1098
<b>4826600</b>	2210	2175	2112	2075	2050	2030	2000	1098
<b>4828600</b>	2210	2175	2112	2075	2050	2030	2000	1098
<b>4060600</b>	2210	2175	2112	2075	2050	2030	2000	1098

Dimensions in millimeters (mm) unless otherwise indicated.

### Technical Specifications

#### PS Modular Freestanding Enclosures – One Door



Mounting panel adjustable in 25 mm/0.98" increments

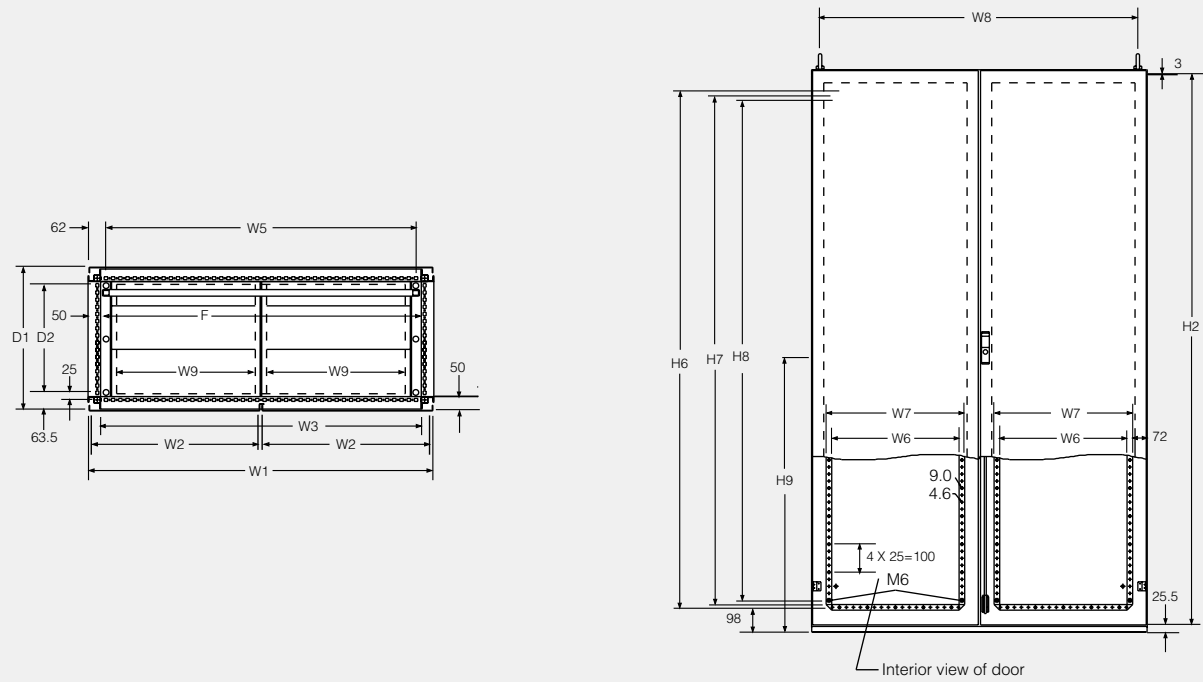
Part No.	Enclosure															Mounting Panel	
	Width dimensions									Depth dimensions						Mounting panel	
	W1	W2	W3	W5	W6	W7	W8	W9	D1	D2	D3	D4	D5	D6	D7	F	G
<b>4666600</b>	599	592	512	475	455	475	535	401	602	475	502	549	469	149-549	225	499	1496
<b>4684600</b>	599	592	512	475	455	475	535	401	402	275	302	349	269	149-349	325	499	1696
<b>4686600</b>	599	592	512	475	455	475	535	401	602	475	502	549	469	149-549	525	499	1696
<b>4688600</b>	599	592	512	475	455	475	535	401	802	675	702	749	669	149-749	725	499	1696
<b>4884600</b>	799	792	712	675	655	675	735	601	402	275	302	349	269	149-349	325	699	1696
<b>4885600</b>	799	792	712	675	655	675	735	601	502	375	402	449	369	149-449	425	699	1696
<b>4886600</b>	799	792	712	675	655	675	735	601	602	475	502	549	469	149-549	525	699	1696
<b>4084600</b>	999	992	912	875	855	875	935	801	402	275	302	349	269	149-349	325	899	1696
<b>4605600</b>	599	592	512	475	455	475	535	401	502	375	402	449	369	149-449	425	499	1896
<b>4606600</b>	599	592	512	475	455	475	535	401	602	475	502	549	469	149-549	525	499	1896
<b>4608600</b>	599	592	512	475	455	475	535	401	802	675	702	749	669	149-749	725	499	1896
<b>4804600</b>	799	792	712	675	655	675	735	601	402	275	302	349	269	149-349	325	699	1896
<b>4805600</b>	799	792	712	675	655	675	735	601	502	375	402	449	369	149-449	425	699	1896
<b>4806600</b>	799	792	712	675	655	675	735	601	602	475	502	549	469	149-549	525	699	1896
<b>4808600</b>	799	792	712	675	655	675	735	601	802	675	702	749	669	149-749	725	699	1896
<b>4626600</b>	599	592	512	475	455	475	535	401	602	475	502	549	469	149-549	525	499	2096
<b>4826600</b>	799	792	712	675	655	675	735	601	602	475	502	549	469	149-549	525	699	2096
<b>4828600</b>	799	792	712	675	655	675	735	601	802	675	702	749	669	149-749	725	699	2096
<b>4060600</b>	999	992	912	875	855	875	935	801	602	475	502	549	469	149-549	525	899	2096

Dimensions in millimeters (mm) unless otherwise indicated.



### Technical Specifications

#### PS Modular Freestanding Enclosures – Two Door



#### Enclosure

- H1 = total height
- H2 = height of rear wall and door
- H3 = available space between frame members
- H5 = span of installation holes
- H6 = distance between installation holes on top and bottom members of door frame
- H7 = available space between top and bottom members of door frame
- H8 = distance between door frame fasteners
- H9 = distance between bottom and center of lock
- W1 = available space between frame members
- W2 = width of door
- W3 = overall or total width
- W5 = span of installation holes/distance between cable base mounting holes
- W6 = available space between vertical members of door frame
- W7 = distance between installation holes on vertical members of door frame
- W8 = distance between eye bolts
- W9 = available space in bottom opening
- D1 = total depth
- D2 = span of installation holes/distance between cable base mounting holes
- D3 = available space between vertical frame members
- D4 = depth of bottom of frame
- D5 = available space in bottom opening
- D6 = area where mounting panel can be installed
- D7 = distance between eye bolts

#### Mounting panel

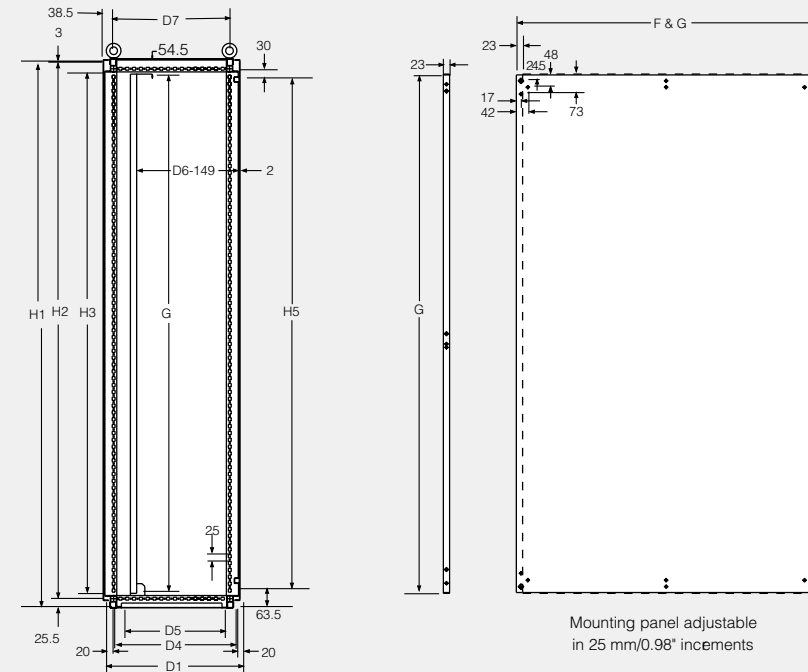
- F = overall width
- G = overall height

Part No.	Enclosure							
	Height dimensions							
	H1	H2	H3	H5	H6	H7	H8	H9
<b>4284600</b>	1810	1775	1712	1675	1650	1630	1600	898
<b>4285600</b>	1810	1775	1712	1675	1650	1630	1600	898
<b>4005600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4006600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4205600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4206600</b>	2010	1975	1912	1875	1850	1830	1800	998
<b>4226600</b>	2210	2175	2112	2075	2050	2030	2000	1098

Dimensions in millimeters (mm) unless otherwise indicated.

### Technical Specifications

#### PS Modular Freestanding Enclosures – Two Door

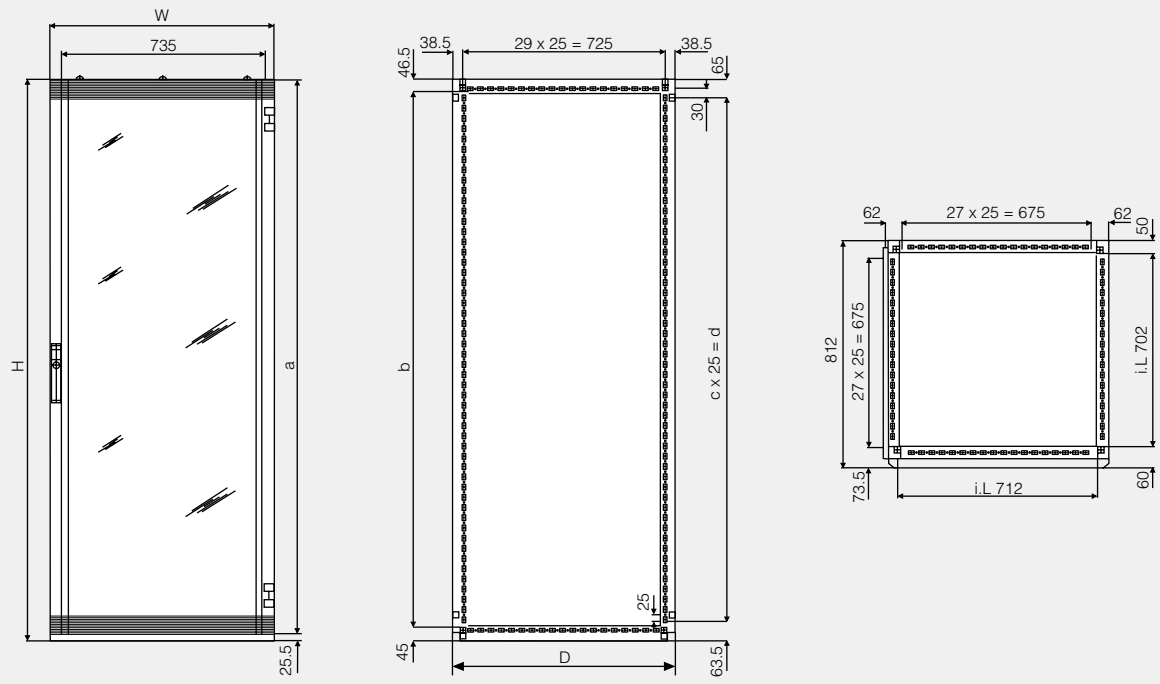


Mounting panel adjustable in 25 mm/0.98" increments

Part No.	Enclosure															Mounting Panel	
	Width dimensions								Depth dimensions							Mounting panel	
	W1	W2	W3	W5	W6	W7	W8	W9	D1	D2	D3	D4	D5	D6	D7	F	G
<b>4284600</b>	1199	592	1112	475	455	1075	1135	481	402	275	302	349	269	149-349	325	1099	1696
<b>4285600</b>	1199	592	1112	475	455	1075	1135	481	502	375	402	449	369	149-449	425	1099	1696
<b>4005600</b>	999	492	912	375	355	375	935	801	502	375	402	449	369	149-449	425	899	1896
<b>4006600</b>	999	492	912	375	355	375	935	801	602	475	502	549	469	149-549	525	899	1896
<b>4205600</b>	1199	592	1112	475	455	1075	1135	481	502	375	402	449	369	149-449	425	1099	1896
<b>4206600</b>	1199	592	1112	475	455	1075	1135	481	602	475	502	549	469	149-549	525	1099	1896
<b>4226600</b>	1199	592	1112	475	455	1075	1135	481	602	475	502	549	469	149-549	525	1099	2096

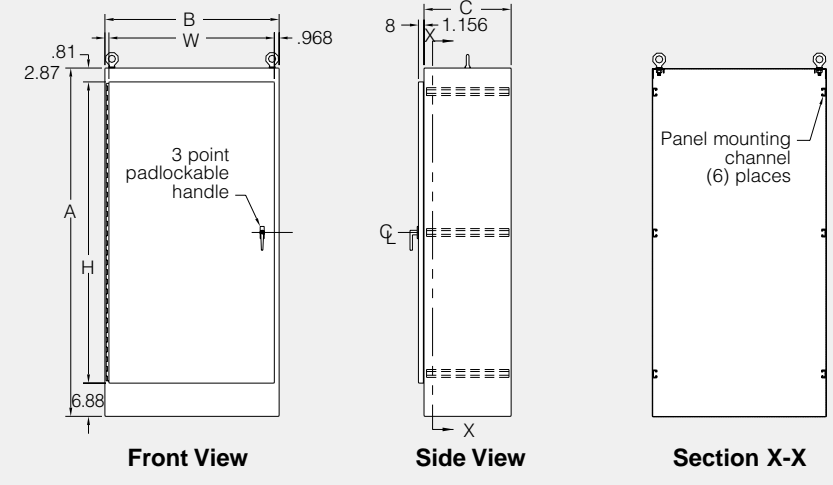
Dimensions in millimeters (mm) unless otherwise indicated.

**Technical Specifications**  
PS Network Enclosures



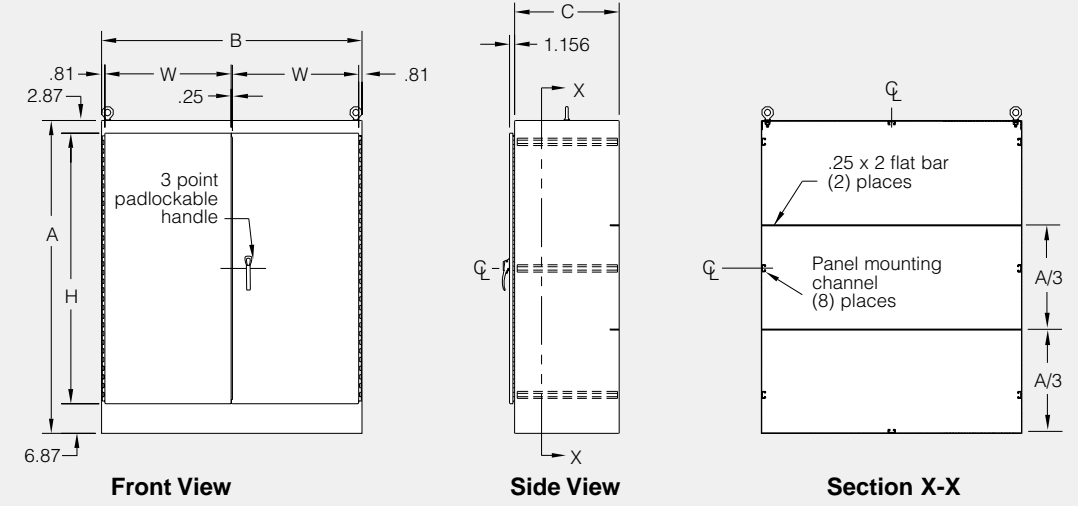
Enclosure																	
Part No. With Sidewalls RAL 7032 Pebble Grey	Part No. Without Sidewalls RAL 7032 Pebble Grey	Part No. With Sidewalls RAL 9005 Black	U	Dimensions						a		b		c		d	
				inches			mm			inches	mm	inches	mm	inches	mm	inches	mm
				H	W	D	H	W	D								
9967600	9967601	-	24	47.2	23.6	23.6	1200	600	600	46.25	1175	43.8	1112	1.7	43	42.3	1075
9967602	9967603	-	24	47.2	23.6	31.5	1200	600	800	46.25	1175	43.8	1112	1.7	43	42.3	1075
9967604	9967605	-	24	47.2	31.5	31.5	1200	800	800	46.25	1175	43.8	1112	1.7	43	42.3	1075
9967606	9967607	-	36	70.1	23.6	23.6	1800	600	600	46.25	1775	67.4	1712	2.6	67	65.9	1675
9967608	9967609	-	36	70.1	23.6	31.5	1800	600	800	46.25	1775	67.4	1712	2.6	67	65.9	1675
9967610	9967611	-	36	70.1	31.5	31.5	1800	800	800	46.25	1775	67.4	1712	2.6	67	65.9	1675
9967612	9967613	9967695	42	78.7	23.6	23.6	2000	600	600	77.8	1975	75.3	1912	3	75	73.8	1875
9967614	9967615	9967694	42	78.7	23.6	31.5	2000	600	800	77.8	1975	75.3	1912	3	75	73.8	1875
9967616	9967617	9967696	42	78.7	31.5	31.5	2000	800	800	77.8	1975	75.3	1912	3	75	73.8	1875
9967618	9967619	9967697	47	86.6	23.6	23.6	2200	600	600	85.6	2175	83.1	2112	3.3	83	81.7	2075
9967620	9967621	-	47	86.6	23.6	31.5	2200	600	800	85.6	2175	83.1	2112	3.3	83	81.7	2075
9967622	9967623	-	47	86.6	31.5	31.5	2200	800	800	85.6	2175	83.1	2112	3.3	83	81.7	2075

**Technical Specifications**  
One Door Freestanding Cabinets



Enclosure							Mounting Panel					
Part No.	Outside dimensions (inches)			Door size		Maximum usable depth panel installed	Part No.	Description	Panel size		Fits enclosure	
	H	W	D	H	W				H	W	A	B
	A	B	C									
<b>One Door, Single Access</b>												
E 602418FS	60.00	24.00	18.00	50.25	22.22	17.63	E 60P24F1	FULL PANEL	48.00	20.00	60.00	24.00
E 722418FS	72.00	24.00	18.00	62.25	22.22	17.63	E 72P24F1	HALF PANEL	24.88	20.00	60.00	24.00
E 723018FS	72.00	30.00	18.00	62.25	28.22	17.63	E 72P30F1	FULL PANEL	60.00	20.00	72.00	24.00
E 723618FS	72.00	36.00	18.00	62.25	34.22	17.63	E 72P36F1	HALF PANEL	30.88	20.00	72.00	24.00
E 903620FS	90.00	36.00	20.00	80.25	34.22	19.63	E 90P36F1	HALF PANEL	39.88	20.00	90.00	24.00
E 722424FS	72.00	24.00	24.00	62.25	22.22	23.63	E 72P24F1	HALF PANEL	30.88	26.00	72.00	30.00
E 723624FS	72.00	36.00	24.00	62.25	34.22	23.63	E 72P36F1	HALF PANEL	24.88	32.00	60.00	36.00
E 903624FS	90.00	36.00	24.00	80.25	34.22	23.63	E 90P36F1	FULL PANEL	60.00	32.00	72.00	36.00

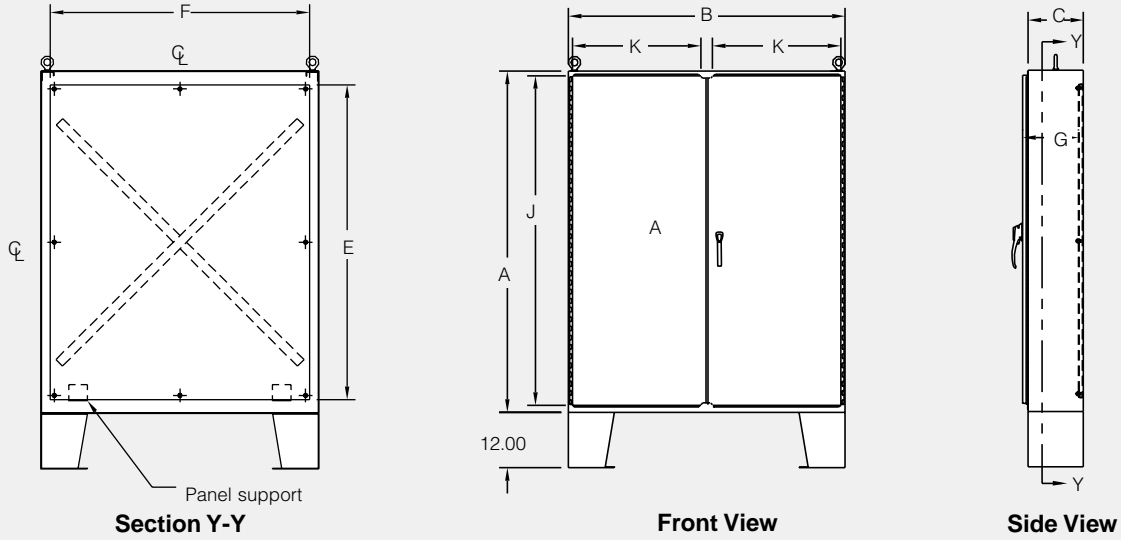
**Two Door Freestanding Cabinets**



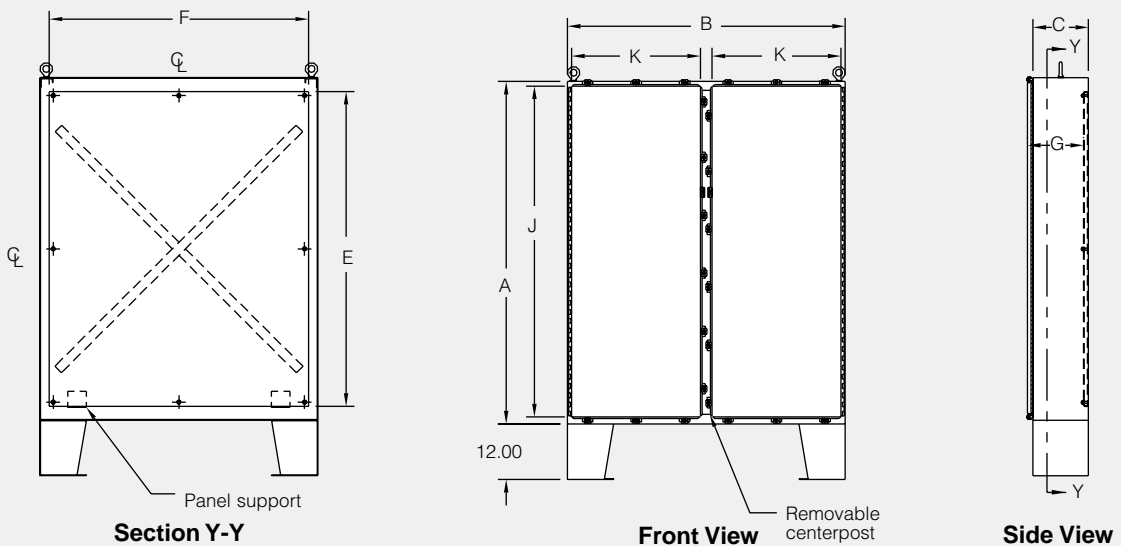
Enclosure							Mounting Panel					
Part No.	Outside dimensions (inches)			Door size		Maximum usable depth panel installed	Part No.	Panel size		Fits enclosure		
	H	W	D	H	W			H	W	A	B	
	A	B	C									
<b>Two Door, Single Access</b>												
E 724818FSDD	72.00	48.00	18.00	62.25	23.06	15.13	E 72P48F1	60.00	44.00	72.00	48.00	
E 907220FSDD	90.00	72.00	20.00	80.25	35.06	17.13	E 90P72F1	60.00	56.00	72.00	60.00	
E 724824FSDD	72.00	48.00	24.00	62.25	23.06	21.13	E 72P48F1	30.88	56.00	72.00	60.00	
E 727224FSDD	72.00	72.00	24.00	62.25	35.06	21.13	E 72P72F1	30.88	68.00	72.00	72.00	
E 907224FSDD	90.00	72.00	24.00	80.25	35.06	21.13	E 90P72F1	78.00	68.00	90.00	72.00	

## Technical Specifications

### Two Door Floormount Enclosures



NEMA 12 Enclosure						Mounting Panel			
Part No.	Outside dimensions (inches)			Door size		Part No.	Panel size		Usable depth
	H	W	D	J	K		E	F	
	A	B	C						
E 604808	60.00	48.00	8.00	58.25	23.06	E 60P48	56.00	44.00	8.00
E 604810	60.00	48.00	10.00	58.25	23.06	E 60P48	56.00	44.00	10.00
E 606010	60.00	60.00	10.00	58.25	29.06	E 60P60	56.00	56.00	10.00
E 726010	72.00	60.00	10.00	70.25	29.06	E 72P60	68.00	56.00	10.00
E 727210	72.00	72.00	10.00	70.25	35.06	E 72P72	68.00	68.00	10.00
E 604812	60.00	48.00	12.00	58.25	23.06	E 60P48	56.00	44.00	12.00
E 606012	60.00	60.00	12.00	58.25	29.06	E 60P60	56.00	56.00	12.00
E 726012	72.00	60.00	12.00	70.25	29.06	E 72P60	68.00	56.00	12.00
E 727212	72.00	72.00	12.00	70.25	35.06	E 72P72	68.00	68.00	12.00
E 604816	60.00	48.00	16.00	58.25	23.06	E 60P48	56.00	44.00	16.00
E 606016	60.00	60.00	16.00	58.25	29.06	E 60P60	56.00	56.00	16.00
E 726016	72.00	60.00	16.00	70.25	29.06	E 72P60	68.00	56.00	16.00
E 727216	72.00	72.00	16.00	70.25	35.06	E 72P72	68.00	68.00	16.00
E 727220	72.00	72.00	20.00	70.25	35.06	E 72P72	68.00	68.00	20.00



NEMA 4 Enclosure						Mounting Panel			
Part No.	Outside dimensions (inches)			Door size		Part No.	Panel size		Usable depth
	H	W	D	J	K		E	F	
	A	B	C						
E 74H72J	74.00	72.00	24.00	71.50	33.81	E 72P72	68.00	68.00	24.00



# FLANGE MOUNT DISCONNECT

## FMD ENCLOSURES

AE Wallmount FMD Enclosures ..... FMD 1-2

NEMA 4 Wallmount Boxes ..... FMD 3-4

NEMA 12 Wallmount Boxes ..... FMD 5-6

TS8 Freestanding FMD Enclosures ..... FMD 7-8

PS Freestanding FMD Enclosures ..... FMD 9-10

Freestanding Heavy Duty Enclosures .. FMD 11-12

Floormount Freestanding Enclosures .. FMD 13-14

Technical Drawings ..... FMD 15-20

FMD Technical Information ..... FMD 21-47





# AE Wallmount FMD Enclosures



## AE Wallmount Carbon Steel Cabinets

Superior in design, Rittal's AE flange mounted disconnect enclosures have fewer moving parts, which reduces assembly and installation time. The special lock system integrates the door lock, operating lever, and door handle into one smooth operating system. The unique, hinged flange door provides easy access during installation and provides more usable installation space.

**Allen Bradley:**  
1494 V operators for disconnects/circuit breakers

**Cutler Hammer/Westinghouse:**  
C361 operators for disconnect switches  
C371 operators for circuit breakers

**General Electric:**  
Type STDA operators for disconnects

**ITE/Siemens:**  
Max-Flex operators for disconnect switches/circuit breakers

**Square D:**  
Class 9422 operators for disconnects/circuit breakers

**ABB:**  
Operators for disconnect switches/circuit breakers

Handle cutout and location has been designed for applications up to 200A.

## Configuration

- NEMA 1, and 12/IP 55 protection
- UL/CSA approvals
- Hinged flange door allows easy component installation and a larger mounting panel
- Universal cut-out accepts most operator handles up to 200A
- All disconnecting hardware is included
- Rear mounting holes allow direct wallmounting or the use of optional mounting feet
- Reinforced mounting panel included
- Powder paint provides superior corrosion protection
- Knife-edge design protects against liquid entry

## Technical Specifications

- Material:**
- Sheet steel
  - *Housing:* 16 ga/1.5 mm
  - *Door:* 14 ga/2 mm
  - *Mounting panel:* 14 ga/2 mm hot-dipped galvanized zinc

- Finish/color:**
- *Housing and door:* powder painted, RAL 7032 pebble grey
  - *Mounting panel:* Type M

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Page** ..... FMD 15

## FMD Technical Information

**Pages** ..... FMD 21-27

Part No.	Enclosure				Mounting Panel								
	Nominal outside dimensions H"xW"xD" (approximate)	NEMA rating	Number of doors	Exact outside dimensions						Dimensions			
				inches			mm			inches		mm	
H	W	D	H	W	D	H	W	H	W	H	W		
<b>1075600</b>	30x24x8	1, 12	1	29.92	23.62	8.27	760	600	210	28.74	21.61	730	549
<b>1074600</b>	30x30x12	1, 12	1	29.92	29.92	11.81	760	760	300	28.74	27.72	730	704
<b>1183600</b>	40x32x12	1, 12	1	39.37	31.50	11.81	1000	800	300	37.60	29.09	955	739
<b>1283600</b>	47x32x12	1, 12	1	47.24	31.50	11.81	1200	800	300	45.47	29.13	1155	740
<b>1115600</b>	55x40x12	1, 12	1	55.12	39.37	11.81	1400	1000	300	53.35	37.00	1355	940

Part No.	Accessories		Plastic print pocket
	Wallmounting brackets		
	3/8" standoff	1 1/2" standoff	
<b>1075600</b>	2508200	2503200	2514000
<b>1074600</b>	2508200	2503200	2514000
<b>1183600</b>	2508200	2503200	2514000
<b>1283600</b>	2508200	2503200	2514000
<b>1115600</b>	2508200	2503200	2514000

# NEMA 4 Wallmount Boxes



## Carbon Steel FMD Cabinets

Rittal Electromate NEMA rated wallmount disconnect enclosures accept all standard available disconnects and circuit breakers, including:

**Allen Bradley:**

1494 V operators for disconnects/circuit breakers

**Cutler Hammer/Westinghouse:**

C361 operators for disconnect switches  
C371 operators for circuit breakers

**General Electric:**

Type STDA operators for disconnects

**ITE/Siemens:**

Max-Flex operators for disconnect switches/circuit breakers

**Square D:**

Class 9422 operators for disconnects/circuit breakers

**ABB:**

Operators for disconnect switches/circuit breakers



Page NON 24

## Configuration

- Continuously welded seams, finished smooth
- Continuous stainless steel hinge with removable pin
- Robotically applied urethane gasket
- Rolled edge prevents entry of dirt and liquids
- Cutout in body for operating handle
- 12 gauge stainless steel captive clamps
- Mounting panel provisions installed
- External mounting brackets
- Print pocket included
- UL/cUL approvals

## Technical Specifications

**Material:**

- *Enclosure/door:* 14 gauge carbon steel

**Finish/color:**

- *Enclosure/door:* polyester-urethane powder coat over phosphatized surfaces - ANSI 61 grey outside and white inside
- *Optional mounting panels:* painted white

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

Page ..... FMD 16

## FMD Technical Information

Pages ..... FMD 35-40

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 24HS2108	24.00	21.38	8.00	E 24P20	21.00	17.00	8.00
E 36HS3108	36.00	31.38	8.00	E 36P30	33.00	27.00	7.37*
E 42HS3112	42.00	31.38	12.00	E 42P30	39.00	27.00	11.37*
E 48HS3712	48.00	37.38	12.00	E 48P36	45.00	33.00	11.37*

\* Usable depth reduced by .625" at stiffener.

Accessories		
Part No.	Window kit	Touch-up paint
E 24HS2108	E PWK1711NF	E L21
E 36HS3108	E PWK2919NF	E L21
E 42HS3112	E PWK3523NF	E L21
E 48HS3712	E PWK3523NF	E L21

# NEMA 12 Wallmount Boxes



## Carbon Steel FMD Cabinets

Rittal Electromate NEMA rated wallmount disconnect enclosures accept all standard available disconnects and circuit breakers, including:

**Allen Bradley:**

1494 V operators for disconnects/circuit breakers

**Cutler Hammer/Westinghouse:**

C361 operators for disconnect switches

C371 operators for circuit breakers

**General Electric:**

Type STDA operators for disconnects

**ITE/Siemens:**

Max-Flex operators for disconnect switches/circuit breakers

**Square D:**

Class 9422 operators for disconnects/circuit breakers

**ABB:**

Operators for disconnect switches/circuit breakers

**Note:**

Additional door hardware is required and must be ordered from disconnect manufacturer.

## Configuration

- Continuously welded seams, finished smooth
- Continuous steel hinge with removable pin
- Urethane gasket
- Rolled edge prevents entry of dirt and liquids
- Cutouts in body and door for operating handle, operating mechanism, and door closing mechanism
- Mounting panel provisions installed
- External mounting brackets
- Print pocket included
- UL/cUL approvals

## Technical Specifications

**Material:**

- *Enclosure/door:* 14 gauge carbon steel

**Finish/color:**

- *Enclosure/door:* polyester-urethane powder coat over phosphatized surfaces – ANSI 61 grey outside and white inside
- *Optional mounting panels:* painted white

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Page** ..... FMD 16

## FMD Technical Information

**Pages** ..... FMD 35-40

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 20SA2208	20.00	21.38	8.00	E 20P20	17.00	17.00	7.75
E 30SA2608	30.00	25.38	8.00	E 30P24	27.00	21.00	7.75
E 30SA2210	30.00	21.38	10.00	E 30P20	27.00	17.00	9.75
E 30SA2610	30.00	25.38	10.00	E 30P24	27.00	21.00	9.75
E 36SA3210	36.00	31.38	10.00	E 36P30	33.00	27.00	9.12*
E 36SA3212	36.00	31.38	12.00	E 36P30	33.00	27.00	11.12*
E 42SA3212	42.00	31.38	12.00	E 42P30	39.00	27.00	11.12*
E 48SA3812	48.00	37.38	12.00	E 48P36	45.00	33.00	11.12*
E 60SA3812	60.00	37.38	12.00	E 60P36	57.00	33.00	11.12*
E 60SA3816	60.00	37.38	16.00	E 60P36	57.00	33.00	15.12*

\* Usable depth reduced by .625" at door stiffener.

**Note:** Designed for 200 and 400 amp Allen Bradley Bulletin 1494V disconnect switches using 1494V-H2 operating handle.

Accessories		
Part No.	Window kit	Touch-up paint
E 20SA2208	E PWK138NF	E L21
E 30SA2608	E PWK2315NF	E L21
E 30SA2210	E PWK1711NF	E L21
E 30SA2610	E PWK2315NF	E L21
E 36SA3210	E PWK3523NF	E L21
E 36SA3212	E PWK2919NF	E L21
E 42SA3212	E PWK3521NF	E L21
E 48SA3812	E PWK3521NF	E L21
E 60SA3812	E PWK3521NF	E L21
E 60SA3816	E PWK3521NF	E L21

**Note:** Designed for 200 and 400 amp Allen Bradley Bulletin 1494V disconnect switches using 1494V-H2 operating handle.



# TS8 Freestanding FMD Enclosures



## TS8 FMD Enclosures

The revolutionary new Rittal TS8 represents a bold new dimension in enclosure design. This modular system boasts a strong, rigid 16-fold dual tubular frame. Multi-level mounting provides for optimum space efficiency and the symmetrical frame structure allows for complete assembly and configuration flexibility.

The cutouts on the flange doors of the TS8 FMD cabinets fit handles for:

- Allen Bradley:**  
1494 V operators for disconnects/circuit breakers
- Cutler Hammer/Westinghouse:**  
C361 operators for disconnect switches  
C371 operators for circuit breakers
- General Electric:**  
Type STDA operators for disconnects
- ITE/Siemens:**  
Max-Flex operators for disconnect switches/circuit breakers
- Square D:**  
Class 9422 operators for disconnects/circuit breakers
- ABB:**  
Operators for disconnect switches/circuit breakers

## Configuration

- Strong 16-fold frame with 30% more stability
- Symmetrical frame for optimal configurability
- NEMA 1, 12/IP 55 protection
- Quick and easy backward compatibility with PS 4000 enclosures
- Two mounting levels for additional installation opportunities
- Integrated continuous electrical bonding for grounding and EMC protection
- UL/cUL approvals

## Technical Specifications

- Material:**
- *Body:* 16-fold, continuously welded
  - *Mounting panel:* zinc-plated, 11 ga/3 mm, sheet steel
- Finish/color:**
- *Body, door(s):* E-coat primed, RAL 7044; textured, powder coated on the outside RAL 7032
  - *Cable entry panels:* 3-part, zinc-plated, 16 ga/1.5 mm sheet steel

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Page** ..... FMD 17

## FMD Technical Information

**Pages** ..... FMD 28-34

Enclosure			Mounting Panel									
Part No.	NEMA rating	Number of doors	Outside dimensions						Dimensions			
			inches			mm			inches		mm	
			H	W	D	H	W	D	H	W	H	W
8984600	1, 12	1	71	32	16	1800	800	400	66.77	27.52	1696	699
8985600	1, 12	1	71	32	20	1800	800	500	66.77	27.52	1696	699
8905600	1, 12	1	79	32	20	2000	800	500	74.65	27.52	1896	699
8906600	1, 12	1	79	32	24	2000	800	600	74.65	27.52	1896	699
8995600	1, 12	1	79	40	20	2000	1000	500	66.77	35.39	1696	899
8996600	1, 12	1	79	40	24	2000	1000	600	74.65	35.39	1896	899

Accessories					
Part No.	Side walls (required)	Front/rear components		Side trim panels	
		4" High	8" High	4" High	8" High
		8984600	8184200	8601800	8602800
8985600	8185200	8601800	8602800	8601050	8602050
8905600	8105200	8601800	8602800	8601050	8602050
8906600	8106200	8601800	8602800	8601060	8602060
8995600	8105200	8601000	8602000	8601050	8602050
8996600	8106200	8601000	8602000	8601060	8602060

# PS Freestanding FMD Enclosures



## PS Series Modular FMD Enclosures

Rittal's PS Series freestanding enclosures are the world's leading modular enclosures. The PS FMD enclosures feature the patented PS 4000 System, with the 9-fold profile frame and an extensive range of accessories—a solution for virtually all applications. Mounting holes at 1" intervals allow maximum space utilization.

### Allen Bradley:

1494 V operators for disconnects/circuit breakers

### Cutler Hammer/Westinghouse:

C361 operators for disconnect switches  
C371 operators for circuit breakers

### General Electric:

Type STDA operators for disconnects

### ITE/Siemens:

Max-Flex operators for disconnect switches/circuit breakers

### Square D:

Class 9422 operators for disconnects/circuit breakers

### ABB:

Operators for disconnect switches/circuit breakers

Handle cutout and location has been designed for applications up to 200A. Contact your local Rittal representative for assistance for applications above 200A.

## Configuration

- Universal cutout accepts most operator handles up to 200A
- Hinged flange door allows easy component installation and a larger mounting panel
- All disconnect hardware is included (4910000)
- Maximum strength and stability through welded frame and corner piece design
- Time saving quick assembly method through the use of the .98"/25 mm hole pattern
- Foamed-on gasket
- Unlimited versatility through a variety of standard modular accessories
- E-coat primer and powder paint provide superior corrosion resistance
- Enclosures can easily be interconnected and interlocked for multi-bay applications
- Patented frame design
- Reversible hinging door
- Knife-edge design averts liquid away from gasket
- Easy access to interior components from all sides
- Door stiffener/mounting frame on doors is standard
- Depth adjustable mounting panel
- Integrated grounding provisions on all surfaces

## Technical Specifications

### Material:

- *Frame:* 9-fold roll-formed, sheet steel
- *Door(s):* 14 ga/2 mm sheet steel
- *Rear wall:* 16 ga/1.5 mm sheet steel
- *Mounting panel:* 11 ga/3 mm hot-dipped galvanized zinc

### Finish:

- *Frame:* E-coat primed, RAL 7032 pebble grey
- *Door, rear wall and roof:* E-coat primed, powder painted, RAL 7032 pebble grey
- *Mounting panel:* Type M

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Page** ..... FMD 18

## FMD Technical Information

**Pages** ..... FMD 28-34

Part No.	Enclosure			Mounting Panel									
	Approximate outside dimensions H"xW"xD"	NEMA rating	Number of doors	Exact outside dimensions						Dimensions			
				inches			mm			inches		mm	
				H	W	D	H	W	D	H	W	H	W
4984600	71x32x16	1, 12	1	70.87	31.50	15.75	1800	800	400	66.77	27.52	1696	699
4985600	71x32x20	1, 12	1	70.87	31.50	19.69	1800	800	500	66.77	27.52	1696	699
4980600	71x39x20	1, 12	1	70.87	39.37	19.69	1800	1000	500	66.77	35.39	1696	899
4905600	79x32x20	1, 12	1	78.74	31.50	19.69	2000	800	500	74.65	27.52	1896	699
4906600	79x32x24	1, 12	1	78.74	31.50	23.62	2000	800	600	74.65	27.52	1896	699
4995600	79x39x20	1, 12	1	78.74	39.37	19.69	2000	1000	500	74.65	35.39	1896	899
4996600	79x39x24	1, 12	1	78.74	39.37	23.62	2000	1000	600	74.65	35.39	1896	899

Part No.	Accessories										
	Sidewalls (required)	Base		Handle		Print pocket	Interconnecting kits		Side door interlocking	Interlocking rods 31"/800 mm length	Flourescent light
		4" high	8" high	Ergoform-S	Pushbutton insert		Brackets	Pins			
4984600	4184000	2823200	-	2450000	2468000	4116000	4582000	4580000	4911000	4918000	9968112
4985600	4185000	2829200	2830200	2450000	2468000	4116000	4582000	4580000	4911000	4918000	9968112
4980600	4185000	2914200	2915200	2450000	2468000	4116000	4582000	4580000	4911000	4918000	9968112
4905600	4105000	2829200	2830200	2450000	2468000	4118000	4582000	4580000	4911000	4918000	9968112
4906600	4106000	2833200	2834200	2450000	2468000	4118000	4582000	4580000	4911000	4918000	9968112
4995600	4105000	2914200	2915200	2450000	2468000	4118000	4582000	4580000	4911000	4918000	9968112
4996600	4106000	2916200	2917200	2450000	2468000	4118000	4582000	4580000	4911000	4918000	9968112

# Freestanding Heavy Duty Enclosures



## NEMA 12 Carbon Steel Cabinets

Rittal Electromate NEMA rated freestanding disconnect enclosures accept all standard available disconnects and circuit breakers, including:

**Allen Bradley:**

- 1494 V operators for disconnects/circuit breakers
- 1494 F operators for disconnect switches
- 1494 D operators for circuit breakers

**Cutler Hammer/Westinghouse:**

- C361 operators for disconnect switches
- C371 operators for circuit breakers

**General Electric:**

- Type STDA operators for disconnects

**ITE/Siemens:**

- Max-Flex operators for disconnect switches/circuit breakers

**Square D:**

- Class 9422 operators for disconnects/circuit breakers

**ABB:**

- Operators for disconnect switches/circuit breakers

## Configuration

- Continuously welded seams, finished smooth
- Body stiffeners provide extra rigidity
- Center post can be removed for panel installation
- Urethane gasket
- Rolled edge prevents entry of dirt and liquids
- Heavy duty continuous steel hinge with removable pin
- Heavy duty 3-point latch secures doors
- Mounting panels included
- Doors can be closed in any order
- Mechanical interlock on master door prevents slave door from being opened unless master door is opened first
- Intergrated defeater on master door
- Operator adaptors may be used to fit most disconnect operators in universal cutout on flange
- Heavy duty lifting eyes
- Print pocket included
- UL/cUL approvals

## Technical Specifications

**Material:**

- Enclosure/door: 10 gauge carbon steel
- Mounting panel: 10 gauge carbon steel

**Finish/color:**

- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces – ANSI 61 grey outside and white inside
- Mounting panel: painted white

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Page** ..... FMD 19

## FMD Technical Information

**Pages** ..... FMD 41-46

Part No.	Enclosure			Mounting Panel		Usable depth
	Outside dimensions (inches)			Panel size		
	H	W	D	H	W	
<b>One Door Enclosure</b>						
E 72XM3418WP	72.00	33.50	18.00	60.00	27.75	18.00
E 84XM4018WP	84.00	39.50	18.00	72.00	33.75	18.00
<b>Two Door Enclosure</b>						
E 84XM7818WP	84.00	77.75	18.00	72.00	72.00	17.00

\* Also available in 3, 4 and 5 door versions.

Part No.	Accessories	
	Window kit	Touch-up paint
<b>One Door Enclosure</b>		
E 72XM3418WP	E PWK3523NF	E L21
E 84XM4018WP	E PWK3523NF	E L21
<b>Two Door Enclosure</b>		
E 84XM7818WP	E PWK3523NF	E L21



# Floormount Freestanding Enclosures



## NEMA 12 Carbon Steel FMD Cabinets

Rittal Electromate NEMA rated floormount disconnect enclosures accept all standard available disconnects and circuit breakers, including:

**Allen Bradley:**

- 1494 V Operators for disconnects/circuit breakers
- 1494 F Operators for disconnect switches
- 1494 D Operators for circuit breakers

**Cutler Hammer/Westinghouse:**

- C361 Operators for disconnect switches
- C371 Operators for circuit breakers

**General Electric:**

- Type STDA Operators for disconnects

**ITE/Siemens:**

- Max-Flex Operators for disconnect switches/circuit breakers

**Square D:**

- Class 9422 Operators for disconnects/circuit breakers

**ABB:**

- Operators for disconnect switches/circuit breakers

## Configuration

- Continuously welded seams, finished smooth
- Body stiffeners provide extra rigidity
- Center post can be removed for panel installation
- Urethane gasket
- Rolled edge prevents entry of dirt and liquids
- Heavy duty continuous steel hinge with removable pin
- Heavy duty 3-point latch secures doors
- Mounting panel provisions installed
- Enclosure is provided with 15" floor stands welded to enclosure
- Heavy duty lifting eyes
- For type "X" enclosures: master door is right-hand door
- Integrated defeater on master door; doors can be closed in any order
- Mechanical interlock on master door prevents slave door from being opened unless master door is opened first
- Operator adaptors may be used to fit most disconnect operators in universal cutout on flange
- Print pocket included

## Technical Specifications

**Material:**

- Enclosure/door: 10 gauge carbon steel

**Finish/color:**

- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces - ANSI 61 grey outside and white inside
- Optional mounting panels: painted white

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Page** ..... FMD 20

## FMD Technical Information

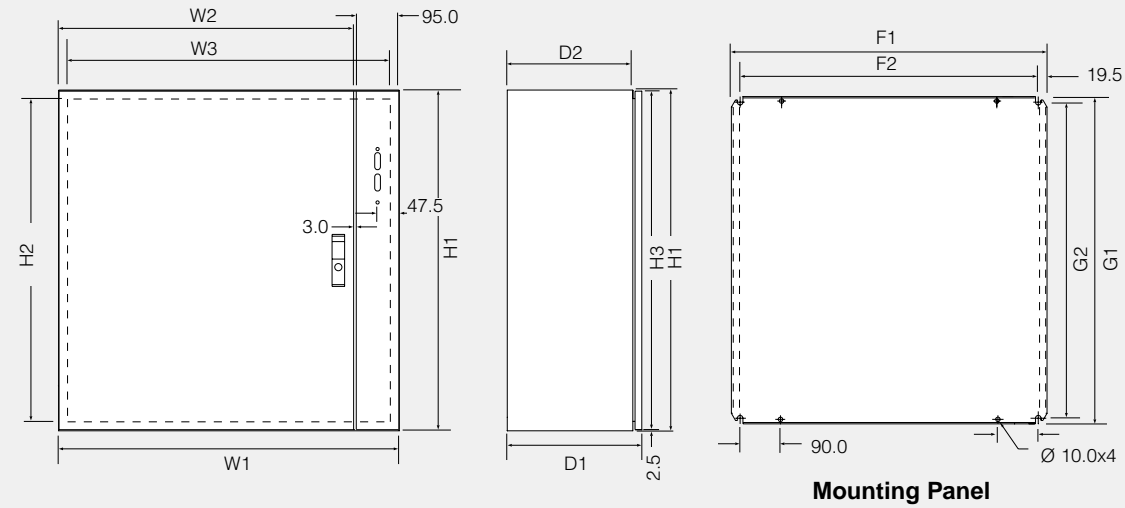
**Pages** ..... FMD 41-46

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 60X4912	60.00	49.38	12.00	E 60P48	56.00	44.00	12.00
E 60X6112	60.00	61.38	12.00	E 60P60	56.00	56.00	12.00
E 72X6112	72.00	61.38	12.00	E 72P60	68.00	56.00	12.00
E 72X7312	72.00	73.38	12.00	E 72P72	68.00	68.00	12.00
E 60X4918	60.00	49.38	18.00	E 60P48	56.00	44.00	18.00
E 60X6118	60.00	61.38	18.00	E 60P60	56.00	56.00	18.00
E 72X6118	72.00	61.38	18.00	E 72P60	68.00	56.00	18.00
E 72X7318	72.00	73.38	18.00	E 72P72	68.00	68.00	18.00

Accessories		
Part No.	Window kit	Touch-up paint
E 60X4912	E PWK3523NF	E L21
E 60X6112	E PWK3523NF	E L21
E 72X6112	E PWK3523NF	E L21
E 72X7312	E PWK3523NF	E L21
E 60X4918	E PWK3523NF	E L21
E 60X6118	E PWK3523NF	E L21
E 72X6118	E PWK3523NF	E L21
E 72X7318	E PWK3523NF	E L21

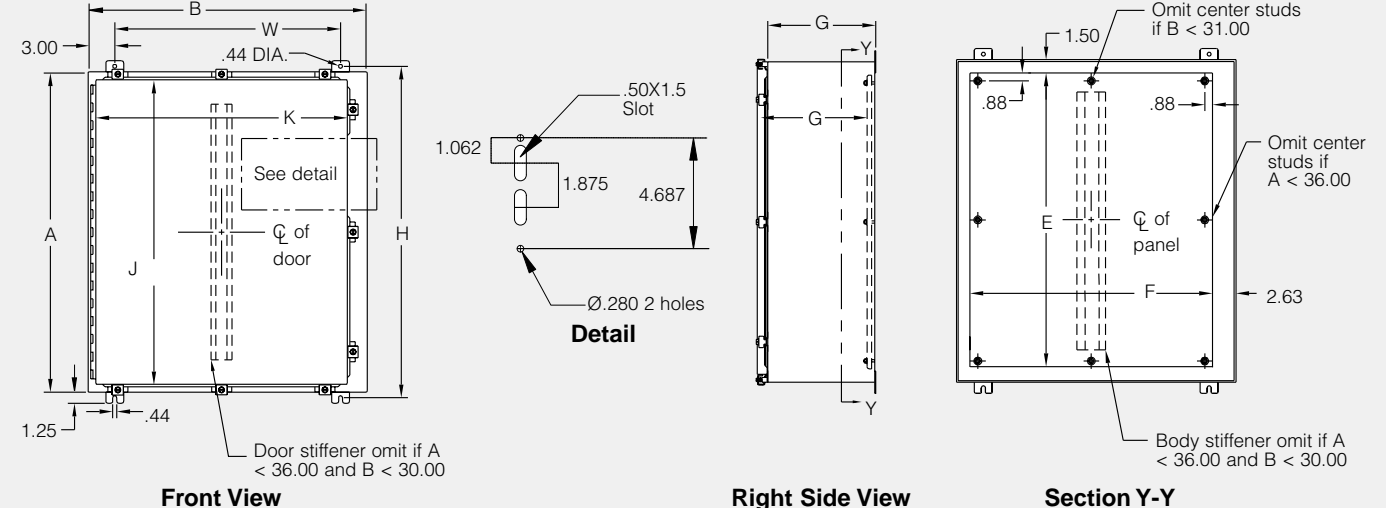


### Technical Specifications AE Wallmount FMD Enclosures



Part No.	Exact outside dimensions						Enclosure						Weight				
	Height (H1)		Width (W1)		Depth (D1)		H2	H3	W2	W3	D2	F1	F2	G1	G2	lbs	kg
	inches	mm	inches	mm	inches	mm											
<b>1075600</b>	29.92	760	23.62	600	8.27	210	720	755	500	560	190	549	510	730	705	70.6	32.1
<b>1074600</b>	29.92	760	29.92	760	11.81	300	720	755	660	720	280	704	665	730	705	97.9	44.5
<b>1183600</b>	39.37	1000	31.50	800	11.81	300	960	995	700	760	280	739	700	955	930	125.4	57.0
<b>1283600</b>	47.24	1200	31.50	800	11.81	300	1160	1195	700	760	280	739	700	1155	1130	154.0	70.0
<b>1115600</b>	55.12	1400	39.37	1000	11.81	300	1360	1395	900	960	280	940	900	1355	1330	213.4	97.0

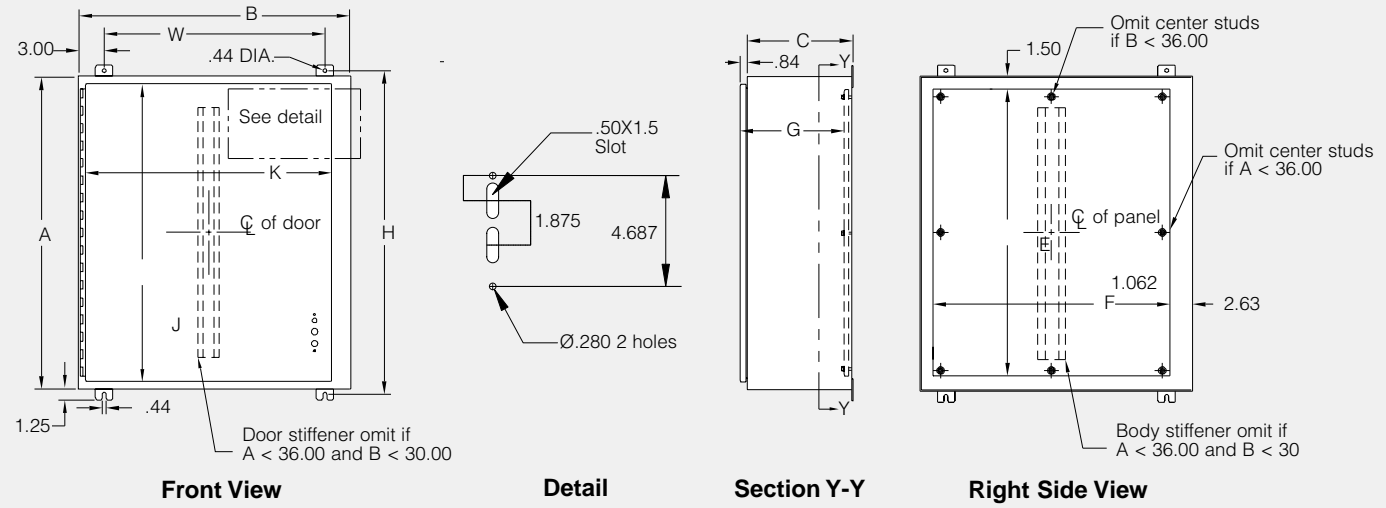
### Technical Specifications NEMA 4 Wallmount Boxes



Part No.	Enclosure						Door and body stiffener	Door size		Part No.	Panel size		Usable depth
	Outside dimensions (inches)			Mounting centers		J		K	E		F	G	
	H	W	D	H	W								
<b>E 24HS2108</b>	24.00	21.38	8.00	25.25	15.38	NO	22.25	18.25	<b>E 24P20</b>	21.00	17.00	8.00	
<b>E 36HS3108</b>	36.00	31.38	8.00	37.25	25.38	YES	34.25	28.25	<b>E 36P30</b>	33.00	27.00	7.37*	
<b>E 42HS3112</b>	42.00	31.38	12.00	43.25	25.38	YES	40.25	28.25	<b>E 42P30</b>	39.00	27.00	11.37*	
<b>E 48HS3712</b>	48.00	37.38	12.00	49.25	31.38	YES	46.25	34.25	<b>E 48P36</b>	45.00	33.00	11.37*	

\* Usable depth reduced by .625" at door stiffener.

### NEMA 12 Wallmount Boxes

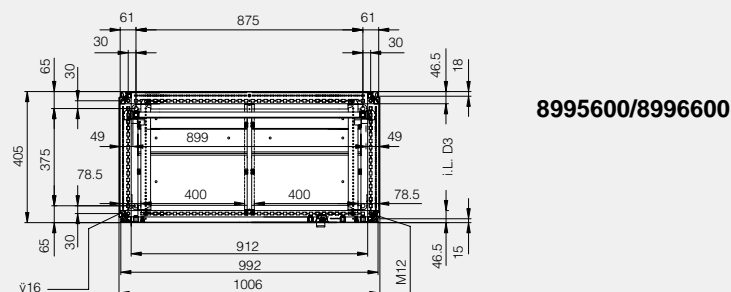
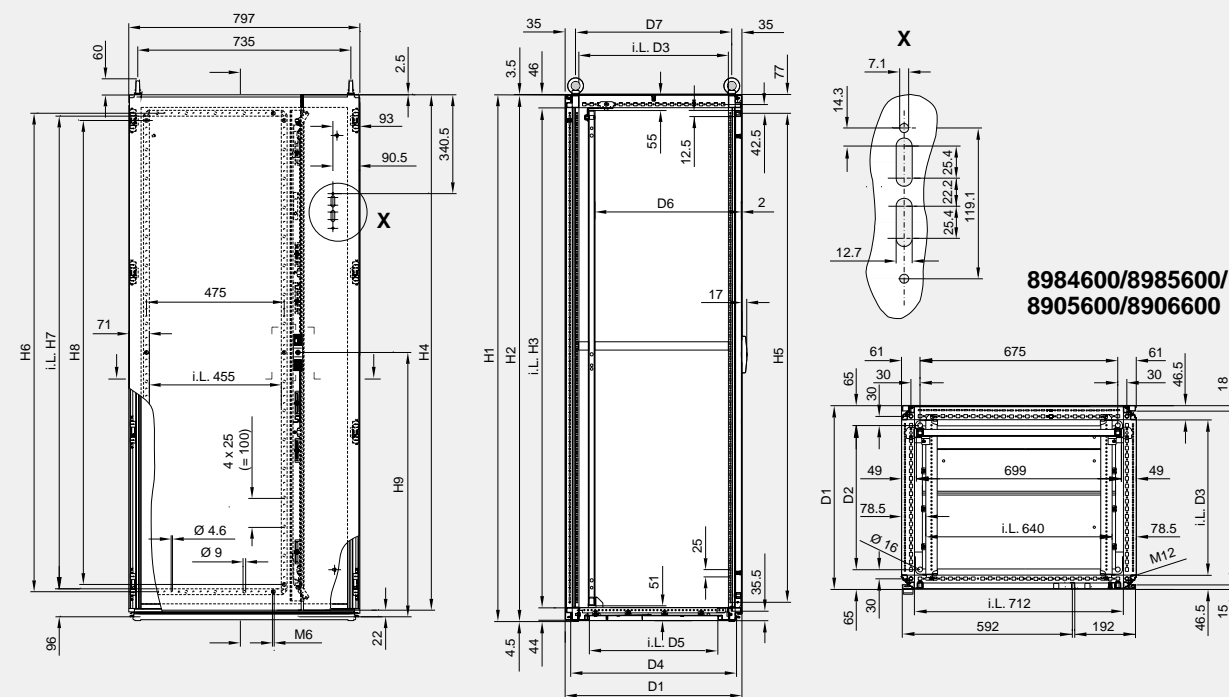


Part No.	Enclosure						Door and body stiffener	Door size		Part No.	Panel size		Usable depth
	Outside dimensions (inches)			Mounting centers		J		K	E		F	G	
	H	W	D	H	W								
<b>E 20SA2208</b>	20.00	21.38	8.00	21.25	15.38	NO	18.25	18.25	<b>E 20P20</b>	17.00	17.00	7.75	
<b>E 30SA2608</b>	30.00	25.38	8.00	31.25	19.38	NO	28.25	22.25	<b>E 30P24</b>	27.00	21.00	7.75	
<b>E 30SA2210</b>	30.00	21.38	10.00	31.25	15.38	NO	28.25	18.25	<b>E 30P20</b>	27.00	17.00	9.75	
<b>E 30SA2610</b>	30.00	25.38	10.00	31.25	19.38	NO	28.25	22.25	<b>E 30P24</b>	27.00	21.00	9.75	
<b>E 36SA3210</b>	36.00	31.38	10.00	37.25	25.38	YES	34.25	28.25	<b>E 36P30</b>	33.00	27.00	9.12*	
<b>E 36SA3212</b>	36.00	31.38	12.00	37.25	25.38	YES	34.25	28.25	<b>E 36P30</b>	33.00	27.00	11.12*	
<b>E 42SA3212</b>	42.00	31.38	12.00	43.25	25.38	YES	40.25	28.25	<b>E 42P30</b>	39.00	27.00	11.12*	
<b>E 48SA3812</b>	48.00	37.38	12.00	49.25	31.38	YES	46.25	34.25	<b>E 48P36</b>	45.00	33.00	11.12*	
<b>E 60SA3812</b>	60.00	37.38	12.00	61.25	31.38	YES	58.25	34.25	<b>E 60P36</b>	57.00	33.00	11.12*	
<b>E 60SA3816</b>	60.00	37.38	16.00	61.25	31.38	YES	58.25	34.25	<b>E 60P36</b>	57.00	33.00	15.12	

\* Usable depth reduced by .625" at door stiffener.

**Note:** Designed for 200 and 400 amp Allen Bradley Bulletin 1494V disconnect switches using 1494V-H2 operating handle.

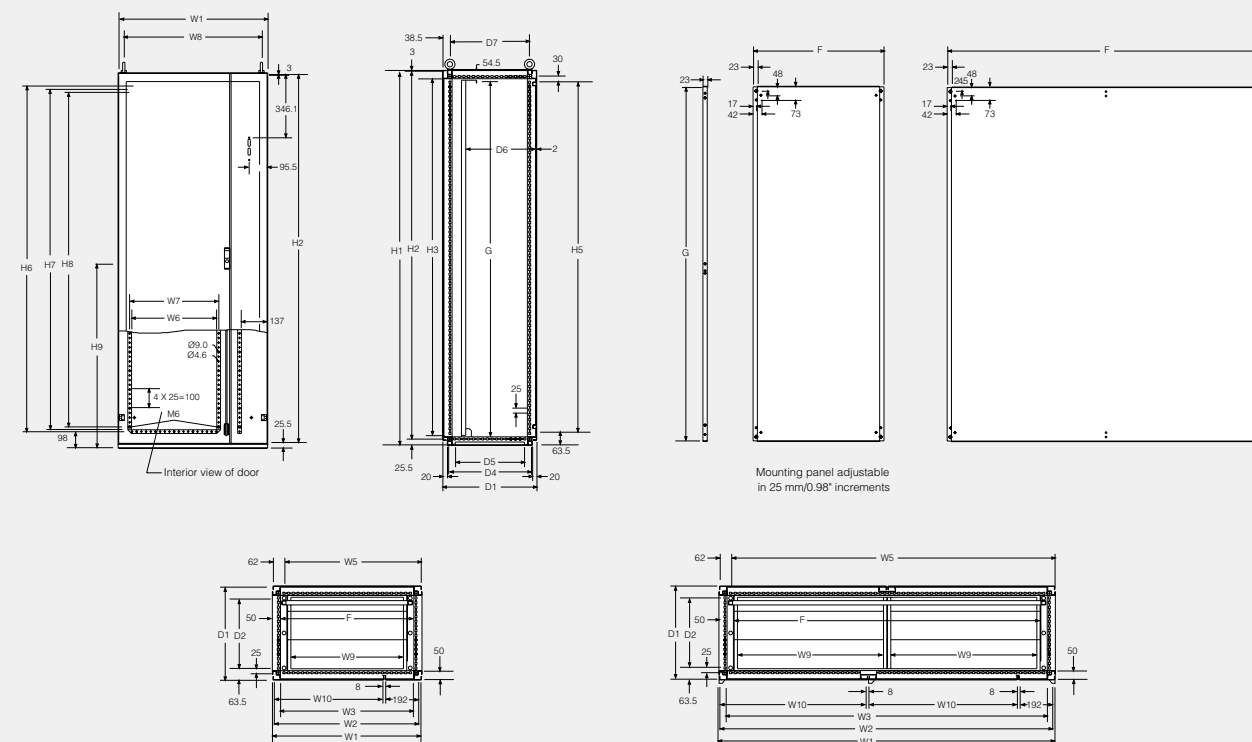
### Technical Specifications TS8 Freestanding FMD Enclosures



Part No.	Enclosure Height dimensions									Enclosure Depth dimensions						
	H1	H2	H3	H4	H5	H6	H7	H8	H9	D1	D2	D3	D4	D5	D6	D7
8984600	1805	1797	1712	1778	1650	1650	1630	1600	911	405	275	312	368	240	130-355	355
8985600	1805	1797	1719	1778	1650	1650	1630	1600	911	505	375	412	468	340	130-455	435
8905600	2005	1997	1912	1978	1850	1850	1830	1800	1011	505	375	412	468	340	130-455	435
8906600	2005	1997	1912	1978	1850	1850	1830	1800	1011	605	475	512	568	440	130-555	535
8995600	2005	1997	1912	1978	1850	1850	1830	1800	1011	505	375	412	468	340	130-455	435
8996600	2005	1997	1912	1978	1850	1850	1830	1800	1011	605	475	512	568	440	130-555	535

- Enclosure**
- H1 = total height
  - H2 = height of rear wall
  - H3 = available space between frame members
  - H4 = height of door and blanking
  - H5 = span of installation holes
  - H6 = distance between installation holes on top and bottom members of door frame
  - H7 = available space between top and bottom members of door frame
  - H8 = distance between door frame fasteners
  - H9 = distance between bottom and center of lock
  - D1 = total depth
  - D2 = span of installation holes/distance between cable base mounting holes
  - D3 = available space between vertical frame members
  - D4 = depth of bottom of frame
  - D5 = available space in bottom opening
  - D6 = possible mounting depth (construction of mounting panel)
  - D7 = distance between eye bolts

### Technical Specifications PS Freestanding FMD Enclosures

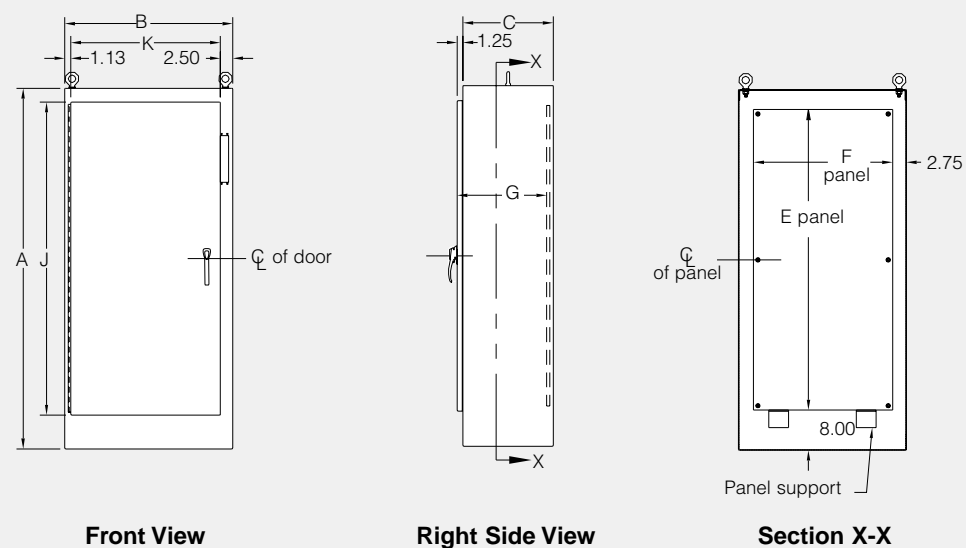


Part No.	Enclosure							
	H1	H2	H3	H5	H6	H7	H8	H9
	inches	70.87	70.87	70.87	78.74	78.74	78.74	78.74
	mm	1800	1800	1800	2000	2000	2000	2000
	inches	31.50	31.50	39.37	31.50	31.50	39.37	39.37
	mm	800	800	1000	800	800	1000	1000
	inches	15.75	19.69	19.69	19.69	23.62	19.69	23.62
	mm	400	500	500	500	600	500	600
		4984600	4985600	4980600	4905600	4906600	4995600	4996600
H2		1775	1775	1775	1975	1975	1975	1975
H3		1712	1712	1712	1912	1912	1912	1912
H5		1675	1675	1675	1875	1875	1875	1875
H6		1650	1650	1650	1850	1850	1850	1850
H7		1630	1630	1630	1830	1830	1830	1830
H8		1600	1600	1600	1800	1800	1800	1800
H9		898	898	898	998	998	998	998
W2		792	792	992	792	792	992	992
W3		712	712	912	712	712	912	912
W5		675	675	875	675	675	875	875
W6		455	455	655	455	455	655	655
W7		475	475	675	475	475	675	675
W8		735	735	935	735	735	935	935
W9		601	601	801	601	601	801	801
W10		592	592	792	592	592	792	792
D2		275	375	375	375	475	375	475
D3		302	402	402	402	502	402	502
D4		349	449	449	449	549	449	549
D5		269	369	369	369	469	369	469
D6		149 - 349	149 - 449	149 - 449	149 - 449	149 - 549	149 - 449	149 - 549
D7		325	425	425	425	525	425	525
F		699	699	899	699	699	899	899
G		1696	1696	1696	1896	1896	1896	1896
Weight	lbs	270.6	354.2	341	345.4	374	354.2	382.8
	kg	123.0	161.0	155.0	157.0	170.0	161.0	174.0

Dimensions in millimeters (mm) unless otherwise indicated.

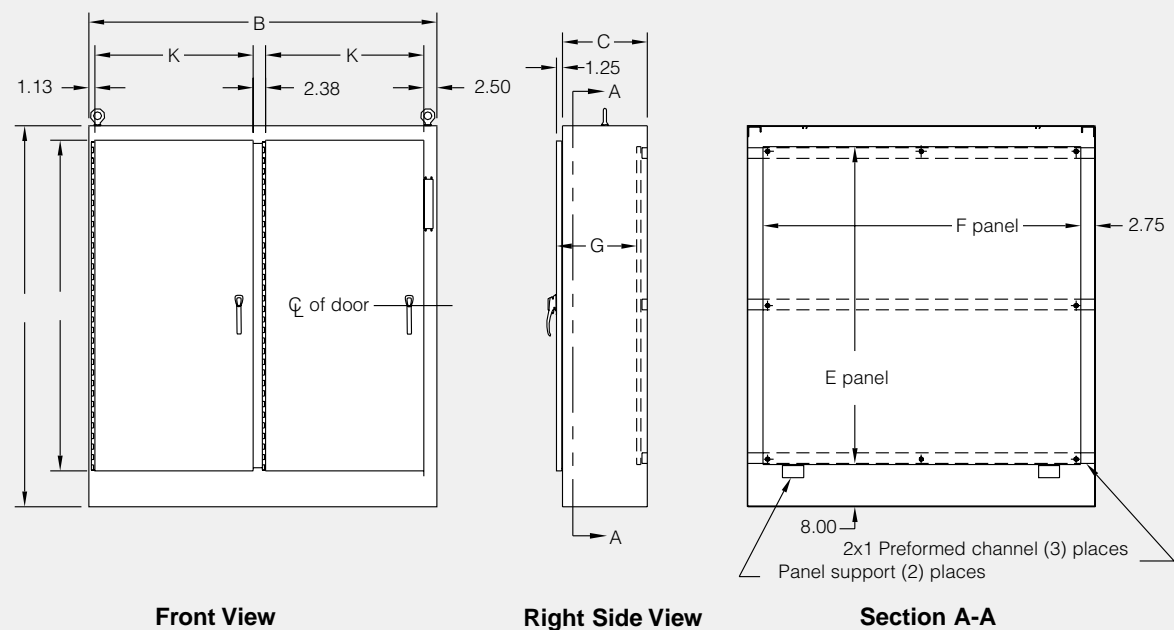
### Technical Specifications

#### One Door Freestanding Heavy Duty Enclosures



Part No.	Enclosure			Mounting Panel					
	Outside dimensions			Door size		Panel size			Usable depth
	H	W	D	J	K	E	F	C	
	A	B	C	J	K	E	F	C	
<b>E 72XM3418WP</b>	72.00	33.50	18.00	62.50	29.83	60.00	27.75	18.00	
<b>E 84XM4018WP</b>	84.00	39.50	18.00	74.50	35.83	72.00	33.75	18.00	

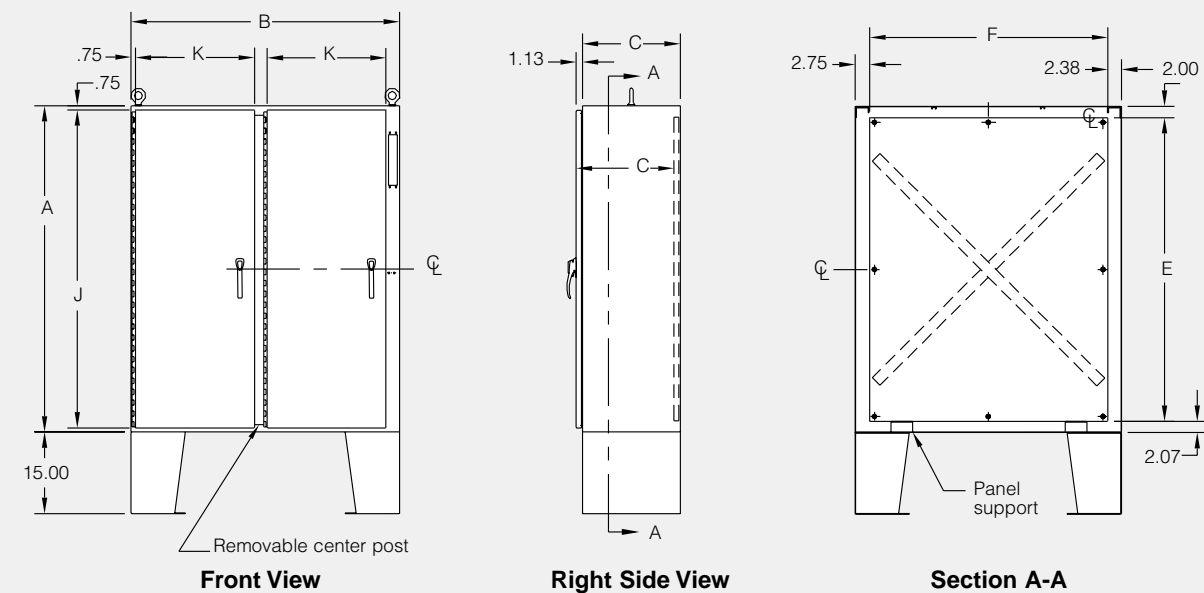
#### Two Door Freestanding Heavy Duty Enclosures



Part No.	Enclosure			Mounting Panel					
	Outside dimensions (inches)			Door size		Panel size			Usable depth
	H	W	D	J	K	E	F	C	
	A	B	C	J	K	E	F	C	
<b>E 84XM7818WP</b>	84.00	77.75	18.00	-	-	72.00	72.00	17.00	

### Technical Specifications

#### Floormount Freestanding Enclosures



Part No.	Enclosure			Door size		Part No.	Mounting Panel			
	Outside dimensions (inches)			Door size			Panel size			Usable depth
	H	W	D	J	K		E	F	C	
	A	B	C	J	K	E <td>F</td> <td>C</td>	F	C		
<b>E 60X4912</b>	60.00	49.38	12.00	58.50	21.88	<b>E 60P48</b>	56.00	44.00	12.00	
<b>E 60X6112</b>	60.00	61.38	12.00	58.50	27.88	<b>E 60P60</b>	56.00	56.00	12.00	
<b>E 72X6112</b>	72.00	61.38	12.00	70.50	27.88	<b>E 72P60</b>	68.00	56.00	12.00	
<b>E 72X7312</b>	72.00	73.38	12.00	70.50	33.88	<b>E 72P72</b>	68.00	68.00	12.00	
<b>E 60X4918</b>	60.00	49.38	18.00	58.50	21.88	<b>E 60P48</b>	56.00	44.00	18.00	
<b>E 60X6118</b>	60.00	61.38	18.00	58.50	27.88	<b>E 60P60</b>	56.00	56.00	18.00	
<b>E 72X6118</b>	72.00	61.38	18.00	70.50	27.88	<b>E 72P60</b>	68.00	56.00	18.00	
<b>E 72X7318</b>	72.00	73.38	18.00	70.50	33.88	<b>E 72P72</b>	68.00	68.00	18.00	

### AE Wallmount FMD Enclosures

AE Wallmount FMD Enclosures														
Part No.	Dimensions						Master door		Slave door		Panel size			
	inches			mm			inches	mm	inches	mm	inches		mm	
	H	W	D	H	W	D	D1	D1	D2	D2	H	W	H	W
1075600	29.92	23.62	8.27	760	600	210	19.68	500	-	-	28.74	21.61	730	549
1074600	29.92	29.92	11.81	760	760	300	25.98	660	-	-	28.74	27.72	730	704
1183600	39.37	31.50	11.81	1000	800	300	27.55	700	-	-	37.60	29.09	955	739
1283600	47.24	31.50	11.81	1200	800	300	27.55	700	-	-	45.47	29.13	1155	740
1115600	55.12	39.37	11.81	1400	1000	300	35.43	900	-	-	53.35	37.00	1355	940

AE Wallmount FMD Enclosures (Continued)								
Part No.	See figure A for illustration							
	CL		HL		PA		PE	
	inches	mm	inches	mm	inches	mm	inches	mm
1075600	1.87	47.5	5.18	131.6	4.59	116.6	1.003	25.5
1074600	1.87	47.5	5.18	131.6	4.59	116.6	1.102	28
1183600	1.87	47.5	9.74	247.6	8.86	225.1	1.2	30.5
1283600	1.87	47.5	9.74	247.6	8.86	225.1	1.18	30
1115600	1.87	47.5	11.6	295	10.72	272.5	1.18	30

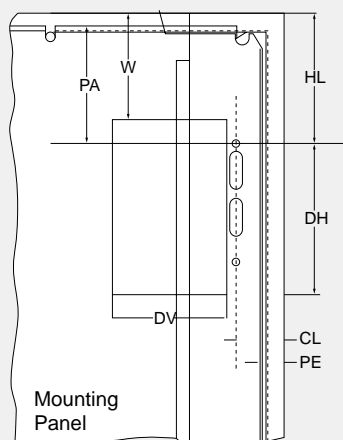


FIG. A

### AE Wallmount FMD Enclosures

Allen Bradley 1494V Disconnects/Circuit Breakers (Fig. A pg. FMD 21)															
Allen Bradley Part No.	Amp rating	Fuse clip	Fuse class	DH		DW*		When HL=131.6 (5.1)		When HL=180.6 (7.11)		When HL=247.6 (9.74)		When HL=295 (11.6)	
				inches	mm	inches	mm	inches	mm	inches	mm	inches	mm		
				W	W	W	W	W	W	W	W				
1494V-DS30	30A	Unfused	-	3.8	98.4	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS30	30A	30A-250V	H,K,R	5.19	131.9	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS30	30A	30A-600V	H,K,R	7.9	202.4	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS30	30A	30A-600V	J	5.19	131.9	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS30	30A	60A-250V	H,K,R	5.9	151.6	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS30	30A	60A-600V	H,K,R	8.47	215.2	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS30	30A	60A-600V	J	5.3	135.5	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS60	60A	Unfused	-	3.8	98.4	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS60	60A	60A-250V	H,K,R	5.9	151.6	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS60	60A	60A-600V	H,K,R	8.47	215.2	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS60	60A	60A-600V	J	5.3	135.5	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS60	60A	30A-600V	H,K,R	7.9	202.4	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS60	60A	100A-250V	H,K	8.86	225.1	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS60	60A	100A-600V	H,K	10.8	275.9	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS60	60A	100A-600V	J	7.6	193.3	7.12	181	3.3	84.8	5.26	133.8	7.9	200.8	9.7	248.2
1494V-DS100	100A	Unfused	-	3.8	98.4	7.12	181	-	-	-	-	7.3	186.1	9.19	233.5
1494V-DS100	100A	100A-250V	H,K,R	9.6	244.1	7.12	181	-	-	-	-	7.3	186.1	9.19	233.5
1494V-DS100	100A	100A-600V	H,K,R	11.6	294.9	7.12	181	-	-	-	-	7.3	186.1	9.19	233.5
1494V-DS100	100A	100A-600V	J	8.3	212.3	7.12	181	-	-	-	-	7.3	186.1	9.19	233.5
1494V-DS100	100A	200A-250V	H,K	12.4	315.1	7.12	181	-	-	-	-	7.3	186.1	9.19	233.5
1494V-DS100	100A	200A-600V	H,K	14.9	378.6	7.12	181	-	-	-	-	7.3	186.1	9.19	233.5
1494V-DS100	100A	200A-600V	J	11.03	280.2	7.12	181	-	-	-	-	7.3	186.1	9.19	233.5
1494V-DS200	200A	Unfused	-	4.6	118.3	8.4	213.9	-	-	-	-	6.3	160.7	8.19	208.1
1494V-DS200	200A	200A-250V	H,K,R	11.8	300.4	8.4	213.9	-	-	-	-	6.3	160.7	8.19	208.1
1494V-DS200	200A	200A-600V	H,K,R	14.3	363.9	8.4	213.9	-	-	-	-	6.3	160.7	8.19	208.1
1494V-DS200	200A	200A-600V	J	10.4	265.5	8.4	213.9	-	-	-	-	6.3	160.7	8.19	208.1
1494V-M40	150A	EDH, FD, FDB, FDC, HFD, HMCP	-	6	152	4.125	104.7	4.1	104.1	6.11	155.1	8.74	222.2	10.6	269.6
1494V-M50	250A	JD, JDB, JDC, HJD HMCP	-	10	254	4.125	104.7	-	-	5.57	141.7	8.2	208.5	10.07	256
1494V-M60	400A	KD, KDB, KDC, HKD HMCP	-	10.125	257	5.5	140	-	-	7.75	197	10.39	264	12.25	311.4

\* Does not include space for optional auxiliary switch.

**Note:**

- For applications above 200A, please contact your local Rittal representative.



### AE Wallmount FMD Enclosures

Square D Class 9422 Disconnects/Circuit Breakers (Fig. A pg. FMD 21)															
Square D Switch Part No.	Amp rating	Fuse clip	Fuse class	DH		DW*		When HL=131.6 (5.1)		When HL=180.6 (7.11)		When HL=247.6 (9.74)		When HL=295 (11.6)	
				inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
				W	W	W	W	W	W	W	W	W	W	W	W
TCN30	30A	Unfused	-	3.8	96.52	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TCF30	30A	30A-250V	H, K, R	5.42	137.79	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TCF33	30A	30A-600V	H, K, R	8.05	204.4	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TCF33	30A	30A-600V	J	5.42	137.79	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TCF33	30A	60A-250V	H, K, R	6.05	153.6	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TDN60	60A	Unfused	-	3.8	96.52	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TDF60	60A	60A-250V	H, K, R	6.05	153.6	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TDF60	60A	30A-600V	H, K, R	8.05	204.4	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TDF63	60A	60A-600V	H, K, R	8.55	217.17	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TDF63	60A	60A-600V	J	5.42	137.79	6.2	157.48	3.5	88.9	5.51	139.9	8.14	206.7	10	254
TEN10	100A	Unfused	-	3.8	96.52	6.2	157.48	-	-	5.51	139.9	8.14	206.7	10	254
TEF10	100A	100A-250V	H, K, R	8.25	209.55	6.2	157.48	-	-	5.51	139.9	8.14	206.7	10	254
TEF10	100A	100A-600V	H, K, R	10.25	260.35	6.2	157.48	-	-	5.51	139.9	8.14	206.7	10	254
TEF10	100A	100A-600V	J	7.05	179.07	6.2	157.48	-	-	5.51	139.9	8.14	206.7	10	254
TF1	200A	Unfused	-	5.25	133.35	11.63	295.4	-	-	-	-	6.49	164.8	8.35	212.09
TF2	200A	200A-250V	H, K, R	11.2	284.48	11.63	295.4	-	-	-	-	6.49	164.8	8.35	212.09
TF2	200A	200A-600V	H, K, R	13.7	347.98	11.63	295.4	-	-	-	-	6.49	164.8	8.35	212.09
TF2	200A	200A-600V	J	9.83	249.68	11.63	295.4	-	-	-	-	6.49	164.8	8.35	212.09
TF3	200A	400A-600V	J	14.25	361.95	11.63	295.4	-	-	-	-	6.49	164.8	8.35	212.09
RG1	75, 100A	GJL	Circuit breaker	3.75	95.2	3.54	90	4.1	104.1	6.11	155.1	8.74	221.9	10.6	269.2
RN1	100A	FAL, FHL	Circuit breaker	8.03	203.9	4.5	114	4.63	117.6	6.64	168.6	9.27	235.4	11.13	282.7
RP1	250A	KAL, KHL	Circuit breaker	9.66	245.3	4.5	114	-	-	6.64	168.6	9.27	235.4	11.13	282.7

\* DW dimension without operating mechanism.

**Note:**

1. For applications above 200A, please contact your local Rittal representative.

### AE Wallmount FMD Enclosures

GE Type STDA Disconnects (Fig. A pg. FMD 21)															
GE Operating Mechanism Part No.	Amp rating	Fuse clip	Fuse class	DH		DW		When HL=131.6 (5.1)		When HL=180.6 (7.11)		When HL=247.6 (9.74)		When HL=295 (11.6)	
				inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
				W	W	W	W	W	W	W	W	W	W	W	W
TDOM1A	30A	Unfused	-	3.75	95.2	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1A	30A	30A-250V	H, R	5.6	142.8	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1B	30A	30A-600V	H, R	8.6	219	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1B	30A	60A-250V	H, R	7	177.8	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1B	30A	60A-250V	H, R	9.5	241.3	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1A	60A	Unfused	-	4.06	103.1	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1B	60A	60A-250V	H, R	7	177.8	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1B	60A	60A-600V	H, R	9.5	241.3	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1B	60A	100A-250V	H, R	8.4	213.5	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1B	60A	100A-600V	H, R	10.4	264.3	5.7	144.4	1.52	38.3	3.4	87.8	6.09	154.8	7.9	202.2
TDOM1A	100A	Unfused	-	4.1	104.7	5.7	144.4	-	-	-	-	6.09	154.8	7.9	202.2
TDOM1B	100A	100A-250V	H, R	8.4	213.5	5.7	144.4	-	-	-	-	6.09	154.8	7.9	202.2
TDOM1B	100A	100A-600V	H, R	10.4	264.3	5.7	144.4	-	-	-	-	6.09	154.8	7.9	202.2
TDOM1B	100A	200A-250V	H, R	13.9	353.2	5.7	144.4	-	-	-	-	6.09	154.8	7.9	202.2
TDOM1B	100A	200A-600V	H, R	16.4	416.7	5.7	144.4	-	-	-	-	6.09	154.8	7.9	202.2
TDOM2	200A	Unfused	-	7.59	192.8	8.78	223	-	-	-	-	-	-	7.4	188.6
TDOM2	200A	200A-250V	H, R	13.9	353.2	8.78	223	-	-	-	-	-	-	7.4	188.6
TDOM2	200A	200A-600V	H, R	16.4	416.7	8.78	223	-	-	-	-	-	-	7.4	188.6

**Note:**

1. For applications above 200A, please contact your local Rittal representative.

GE Type STDA Circuit Breakers (Fig. A pg. FMD 21)														
GE Operating Mechanism Part No.	Amp rating	Frame type	DH		DW		When HL=131.6 (5.1)		When HL=180.6 (7.11)		When HL=247.6 (9.74)		When HL=295 (11.6)	
			inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
			W	W	W	W	W	W	W	W	W	W	W	W
TDOM1A	150A	TEB, TED, THED	5.59	142	4.1	104.1	-	-	-	-	7.4	187.9	9.26	235.2
TDOM1A	150A	TEC	5.59	142	4.1	104.7	-	-	-	-	7.4	187.9	9.26	235.2
TDOM1B	150A	TB1	9.59	243.6	4.1	104.7	-	-	-	-	7.4	187.9	9.26	235.2
TDOM1B	150A	TEC, TECL	7.46	189.7	4.1	104.7	-	-	-	-	7.4	187.9	9.26	235.2
TDOM1C	150A	TEL	5.59	142	4.1	104.7	-	-	-	-	7.4	187.9	9.26	235.2
TDOM1D	150A	THLC1	8.37	212.7	4.1	104.7	-	-	-	-	7.74	196.5	9.6	243.8
TDOM3	225A	TFJ	8.93	227	4.1	104.7	-	-	-	-	7.56	192	9.42	239.2
TDOM3	225A	TFK, THFK, TFL	8.93	227	4.1	104.7	-	-	-	-	7.56	192	9.42	239.2
TDOM6	225A	THLC2	10.8	275.4	5.7	145.2	-	-	-	-	7.56	192	9.42	239.2

### AE Wallmount FMD Enclosures

ITE Max-Flex Operators for Disconnect Switches (Fig. A pg. FMD 26)											
Switch Operator Part No.	Max-Flex variable depth complete handle mechanism	Fixed depth complete handle mechanism	Amp rating	Fuse kit	Fuse class	Panel space requirements					
						inches			mm		
						A	B	C	A	B	C
MCS603R MCS603L	FHOS06036R FHOS06036L	FDFS06R	30	No fuse	-	6.13	5.52	-	155.7	140.2	-
				30A, 250V	H, R	6.13	5.52	8.11	155.7	140.2	205.9
				30A, 600V	H, R	6.13	5.52	10.11	155.7	140.2	256.7
				30A, 600V	J	6.13	5.52	8.48	155.7	140.2	215.3
MCS606R MCS606L	FHOS06036R FHOS06036L	FDFS06R	60	No fuse	-	6.13	5.52	-	155.7	140.2	-
				60A, 250V	H, R	6.13	5.52	7.86	155.7	140.2	199.6
				60A, 600V	H, R	6.13	5.52	10.38	155.7	140.2	263.6
				60A, 600V	J	6.13	5.52	8.35	155.7	140.2	212
MCS610R MCS610L	FHOS06036R FHOS06036L	FDFS06R	100	No fuse	-	7.38	7.59	-	187.4	192.7	-
				100A, 250V	H, R	7.38	7.59	11.85	187.4	192.7	300.9
				100A, 600V	H, R	7.38	7.59	13.85	187.4	192.7	351.7
				100A, 600V	J	7.38	7.59	10.6	187.4	192.7	269.2
MCS620R MCS620L	FHOS20036R	FDFS20R	200	No fuse	-	9.17	9.00	-	232.9	228.6	-
				200A, 250V	H, R	9.17	9.00	14.7	232.9	228.6	373.3
				200A, 600V	H, R	9.17	9.00	17.2	232.9	228.6	436.8
				200A, 600V	J	9.17	9.00	13.32	232.9	228.6	338.3

**Note:**

- To order Class R fuse kit, you must order Class H fuse kit and corresponding Class R fuse conversion kit.
- Max-Flex standard cable length is 36 inches. Alternate cable lengths are available.
- Maximum length with Class H and R fuses.

Maximum "E" Dimension For ITE Max-Flex With Disconnect Switch (Fig. B pg. FMD 26)											
Switch Part No.	Cable Part No.	When enclosure depth=MPL position									
		When 8.27 (210)= 7.24 (184)		When 9.84 (250)=8.82 (224)		When 11.81 (300)=10.78 (274)		When 13.87 (350)=12.75 (324)		When 15.75 (400)=10.75 (273)	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
MCS603, MCS606, MCS610	FHOEC036	16.0	406	13.0	330	13.5	343	8.0	203	13.5	343
MCS620	FHOEC036	15.0	381	12.0	304	12.5	317	7.0	178	12.5	317

Maximum "E" Dimension For ITE Max-Flex With Disconnect Switch (Fig. B pg. FMD 26)						
Enclosure depth		36" Cable				
inches	mm	Fmin		Fmax		
		inches	mm	inches	mm	mm
8.27	210	7.0	177.8	14.5	368.3	
9.84	250	5.5	139.7	13.1	332.7	
11.81	300	5.0	127	12.0	304.8	
13.87	350	4.0	101.6	9.4	238.7	
15.75	400	4.0	101.6	9.4	238.7	

Fixed Depth Flange Mounted Handle With ITE Disconnect Switch (Fig. C pg. FMD 26)											
Switch Part No.	Handle Part No.	Dimensions									
		X1		X2		Y1		Y2		Z1	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
MCS603, MCS606	FDFS06R	3.52	89.4	1.5	38.1	0.0	0.0	1.89	48	6.44	163.5
MCS610	FDFS06R	3.91	99.3	1.81	45.9	0.13	3.3	3.0	76.2	6.44	163.5
MCS620	FDFS20R	1.51	38.3	7.86	199.6	0.38	9.6	5.44	138.1	10.93	277.6

**Note:**

- Z1 is the distance between the enclosure door and MPL.

### AE Wallmount FMD Enclosures

For ITE Max-Flex Operators for Circuit Breakers			
Breaker Part No.	Amp rating	Circuit breaker frame size	For use with breaker type(s)
FHOE036	125	ED, HED, EF (CE)	ED2, ED4, ED6, HED4, HED6 ETI, HHED6, EFC
FHOE036	125	CED, EF (CE)	CED6, CED6 ETI, EFF
FHOF036	250	FD, FXD, HFD, HFXD, FF (CE)	FXD6-A, FD6-A, HFD6, HFXD6, HHFD6, FD6 ETI, FFC, FFF
FHOF036	250	CFD	CFD6, CFD6 ETI

**Note:**

- For applications above 200A, please contact your local Rittal representative.

ITE Circuit Breaker Mounting Dimensions (Fig. D pg. FMD 26)														
Circuit breaker frame size	Amp rating	See fig. D												
		A		B		C		D*		K		DH (normal)		Tap size
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	
ED, HED, EF	125	1.0	25.4	5.0	127	0.65	16.5	6.33	160.7	-	-	6.81	172.9	#8-32
		1.0	25.4	5.0	127	0.65	16.5	8.93	226.8	3.25	82.5	6.81	172.9	
FXD, FD, HFD, HFXD, FF	250	1.5	38.1	7.5	190.5	1.0	25.4	9.5	241.3	-	-	6.78	172.2	#1/4 20
		1.5	38.1	7.5	190.5	1.0	25.4	14.2	361.9	4.6	117.4	6.78	172.2	

Maximum "E" Dimension For ITE Max-Flex With Circuit Breaker (Fig. D pg. FMD 26)											
Cable Part No.	Frame size	When enclosure depth=MPL position									
		When 8.27 (210)= 7.24 (184)		When 9.84 (250)=8.82 (224)		When 11.81 (300)=10.78 (274)		When 13.87 (350)=12.75 (324)		When 15.75 (400)=10.75 (273)	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
FHOEC036	ED, HED, CED, EF	13.5	342.9	13.5	342.9	13	330	10.7	271	10.7	271
FHOEC036	FXD, FD, HFD, HFXD, FF, CFD	13.5	342.9	13.5	342.9	13	330	10.7	271	10.7	271

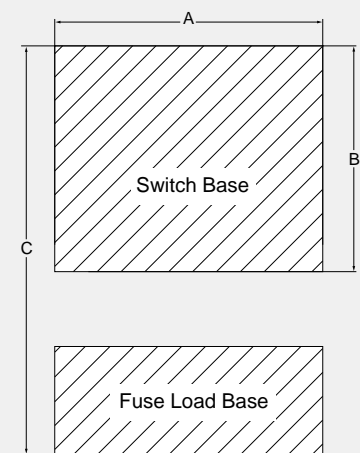


FIG. A

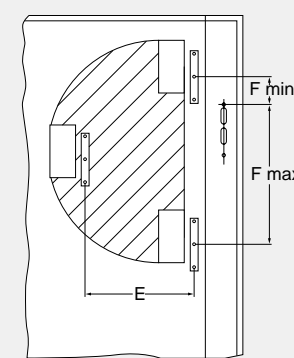


FIG. B

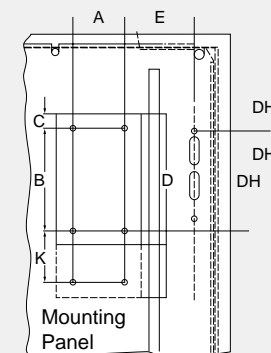


FIG. D

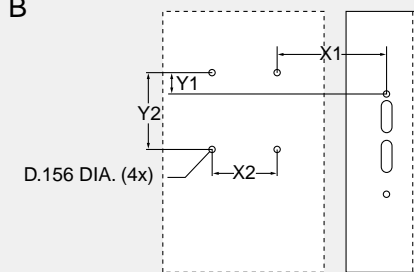


FIG. C

**AE Wallmount FMD Enclosures**

Cutler-Hammer (C361 Disconnect Switches) (Fig. A pg. FMD 21)															
Cutler-Hammer Part No.	Amp rating	Fuse clip	Fuse class	DH		DW		When HL=131.6 (5.18)		When HL=180.6 (7.11)		When HL=247.6 (9.74)		When HL=295 (11.6)	
				inches	mm	inches	mm	inches	mm	inches	mm	inches	mm		
				W	W	W	W	W	W	W	W				
NC	30A	Unfused	-	3.9	99.18	6	152.4	3.58	91.13	5.51	140.1	8.14	206.9	10	254.2
SC21	30A	30A-250V	H,K,R	7.6	194.74	6	152.4	3.58	91.13	5.51	140.1	8.14	206.9	10	254.2
SC61	30A	60A-250V	H,K,R	8.16	207.4	6	152.4	3.58	91.13	5.51	140.1	8.14	206.9	10	254.2
SC61	30A	30A-600V	H,K,J,R	7.6	194.74	6	152.4	3.58	91.13	5.51	140.1	8.14	206.9	10	254.2
ND	60A	Unfused	-	3.9	99.18	6	152.4	3.58	91.13	5.51	140.1	8.14	206.9	10	254.2
SD22	60A	Unfused	-	3.9	99.18	6	152.4	3.58	91.13	5.51	140.1	8.14	206.9	10	254.2
SD22	60A	60A-250V	H,K,R	8.16	207.4	6	152.4	3.58	91.13	5.51	140.1	8.14	206.9	10	254.2
SD62	60A	60A-600V	H,K,R	8.16	207.4	6	152.4	3.58	91.13	5.51	140.1	8.14	206.9	10	254.2
SD62	60A	60A-600V	J	7.79	197.9	6	152.4	3.58	91.13	5.51	140.1	8.14	206.9	10	254.2
NE	100A	Unfused	-	8.9	226.05	7	187.5	3.23	82	5.16	131.06	7.79	197.8	9.65	245.1
SE263	100A	100A-250V	H,K,R	8.9	226.05	7	187.5	3.23	82	5.16	131.06	7.79	197.8	9.65	245.1
SE263	100A	100A-600V	H,K,R	8.9	226.05	7	187.5	3.23	82	5.16	131.06	7.79	197.8	9.65	245.1
SE263	100A	100A-600V	J	8.9	226.05	7	187.5	3.23	82	5.16	131.06	7.79	197.8	9.65	245.1
NF	200A	Unfused	-	13.1	333.8	9.75	247.6	-	-	-	-	-	-	6.74	171.3
SF264	200A	200A-250V	H,K,R	13.1	333.8	9.75	247.6	-	-	-	-	-	-	6.74	171.3
SF264	200A	200A-600V	H,K,R	13.1	333.8	9.75	247.6	-	-	-	-	-	-	6.74	171.3
SF264	200A	200A-600V	J	13.1	333.8	9.75	247.6	-	-	-	-	-	-	6.74	171.3

- Note:**
- For applications above 200A, please contact your local Rittal representative.
  - DH dimension includes the lowering mechanism.

Cutler-Hammer (C371 Circuit Breaker Operator) (Fig. A pg. FMD 21)														
Cutler-Hammer Part No.	Amp rating	Frame type	DH		DW		When HL=131.6 (5.18)		When HL=180.6 (7.11)		When HL=247.6 (9.74)		When HL=295 (11.6)	
			inches	mm	inches	mm	inches	mm	inches	mm	inches	mm		
			W	W	W	W	W	W	W	W				
C371E	150A	Cutler-Hammer FDB, FD, FDC, HFD EHD	5.33	135.38	4.125	105	4.51	114.5	6.44	163.5	9.07	230.3	10.93	277.6
C371E	150A	Westinghouse F Frame/Series C	5.33	135.38	4.125	105	4.51	114.5	6.44	163.5	9.07	230.3	10.93	277.6
C371F	225A	Cutler-Hammer HJD, JD, JDC	9.37	238.1	10	254	-	-	6.48	164.7	9.11	231.5	10.97	278.7
C371F	250A	Westinghouse J Frame/Series C	9.37	238.1	10	254	-	-	6.48	164.7	9.11	231.5	10.97	278.7

- Note:**
- For applications above 200A, please contact your local Rittal representative.

**TS Freestanding FMD Enclosures**

TS Freestanding FMD Enclosures											
Part No.	H		W		D		D1 master door		D2 slave door	C panel depth	
	inches	mm	inches	mm	inches	mm	inches	mm	-	inches	mm
	8984600	70.87	1800	31.50	800	15.75	400	23.30	592	-	5.86-13.74
8985600	70.87	1800	31.50	800	19.69	500	23.30	592	-	5.86-17.67	149-449
8905600	78.74	2000	31.50	800	19.69	500	23.30	592	-	5.86-17.67	149-449
8906600	78.74	2000	31.50	800	23.62	600	23.30	592	-	5.86-21.61	149-549
8995600	78.74	2000	39.37	1000	19.69	500	31.18	792	-	5.86-17.67	149-449
8996600	78.74	2000	39.37	1000	23.62	600	31.18	792	-	5.86-21.61	149-549

TS Freestanding FMD Enclosures (Continued)												
Part No.	Panel size — see figure A for illustration											
	H		W		CL		HL		PA		PE	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
8984600	66.77	1696	27.52	699	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
8985600	66.77	1696	27.52	699	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
8905600	74.65	1896	27.52	699	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
8906600	74.65	1896	27.52	699	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
8995600	74.65	1896	35.39	899	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
8996600	74.65	1896	35.39	899	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5

**PS Freestanding FMD Enclosures**

PS Freestanding FMD Enclosures											
Part No.	H		W		D		D1 master door		D2 slave door	C panel depth	
	inches	mm	inches	mm	inches	mm	inches	mm	-	inches	mm
	4984600	70.87	1800	31.50	800	15.75	400	23.30	592	-	5.86-13.74
4985600	70.87	1800	31.50	800	19.69	500	23.30	592	-	5.86-17.67	149-449
4980600	70.87	1800	39.37	1000	19.69	500	31.18	792	-	5.86-17.67	149-449
4905600	78.74	2000	31.50	800	19.69	500	23.30	592	-	5.86-17.67	149-449
4906600	78.74	2000	31.50	800	23.62	600	23.30	592	-	5.86-21.61	149-549
4995600	78.74	2000	39.37	1000	19.69	500	31.18	792	-	5.86-17.67	149-449
4996600	78.74	2000	39.37	1000	23.62	600	31.18	792	-	5.86-21.61	149-549

PS Freestanding FMD Enclosures (Continued)												
Part No.	Panel size — see figure A for illustration											
	H		W		CL		HL		PA		PE	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
4984600	66.77	1696	27.52	699	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
4985600	66.77	1696	27.52	699	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
4980600	66.77	1696	35.39	899	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
4905600	74.65	1896	27.52	699	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
4906600	74.65	1896	27.52	699	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
4995600	74.65	1896	35.39	899	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5
4996600	74.65	1896	35.39	899	3.75	95.5	13.62	346.1	11.48	291.6	1.98	50.5

- TS/PS Door Interlock Accessories**
- Master door interlock kit\*
  - Slave door interlock kit
  - Slave door interlock rods
    - 23.6"/600 mm
    - 31.5"/800 mm
    - 47.2"/1200 mm
- \* Included with every TS/PS enclosure.

- Part No.**
- PS 4910000/TS 8910000**
  - PS 4911000**
  - PS 4916000**
  - PS 4918000**
  - PS 4920000**

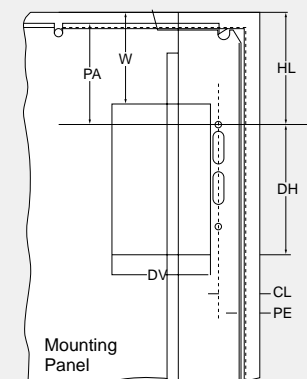


FIG. A



**TS/PS Freestanding FMD Enclosures**

Allen-Bradley 1494V Disconnects/Circuit Breakers (Fig. A pg. FMD 28)									
Allen Bradley Part No.	Amp rating	Fuse clip	Fuse class	DH		DW*		When HL=346.1 (13.62)	
				inches	mm	inches	mm	inches	mm
				W	W	W	W		
1494VDS30	30A	Unfused	-	3.8	98.4	7.12	181.0	11.78	299.3
1494VDS30	30A	30A-250V	H, K, R	5.19	131.9	7.12	181.0	11.78	299.3
1494VDS30	30A	30A-600V	H, K, R	7.9	202.4	7.12	181.0	11.78	299.3
1494VDS30	30A	30A-600V	J	5.19	131.9	7.12	181.0	11.78	299.3
1494VDS30	30A	60A-250V	H, K	5.9	151.6	7.12	181.0	11.78	299.3
1494VDS30	30A	60A-600V	H, K	8.47	215.2	7.12	181.0	11.78	299.3
1494VDS30	30A	60A-600V	J	5.3	135.5	7.12	181.0	11.78	299.3
1494VDS60	60A	Unfused	-	3.8	98.4	7.12	181.0	11.78	299.3
1494VDS60	60A	60A-250V	H, K, R	5.9	151.6	7.12	181.0	11.78	299.3
1494VDS60	60A	60A-600V	H, K, R	8.47	215.2	7.12	181.0	11.78	299.3
1494VDS60	60A	60A-600V	J	5.3	135.5	7.12	181.0	11.78	299.3
1494VDS60	60A	30A-600V	H, K, R	7.9	202.4	7.12	181.0	11.78	299.3
1494VDS60	60A	100A-250V	H, K	8.86	225.1	7.12	181.0	11.78	299.3
1494VDS60	60A	100A-600V	H, K	10.8	275.9	7.12	181.0	11.78	299.3
1494VDS60	60A	100A-600V	J	7.6	193.3	7.12	181.0	11.78	299.3
1494VDS100	100A	Unfused	-	3.8	98.4	7.12	181.0	11.2	284.6
1494VDS100	100A	100A-250V	H, K, R	9.6	244.1	7.12	181.0	11.2	284.6
1494VDS100	100A	100A-600V	H, K, R	11.6	294.9	7.12	181.0	11.2	284.6
1494VDS100	100A	100A-600V	J	8.3	212.3	7.12	181.0	11.2	284.6
1494VDS100	100A	200A-250V	H, K	12.4	315.1	7.12	181.0	11.2	284.6
1494VDS100	100A	200A-600V	H, K	14.9	378.6	7.12	181.0	11.2	284.6
1494VDS100	100A	200A-600V	J	11.03	280.2	7.12	181.0	11.2	284.6
1494VDS200	200A	Unfused	-	4.6	118.3	8.4	213.9	10.2	259.2
1494VDS200	200A	200A-250V	H, K, R	11.8	300.4	8.4	213.9	10.2	259.2
1494VDS200	200A	200A-600V	H, K, R	14.3	363.9	8.4	213.9	10.2	259.2
1494VDS200	200A	200A-600V	J	10.4	265.5	8.4	213.9	10.2	259.2
1494VM40	150A	EHD, FD, FDB, FDC, HFD, H MCP	-	6.0	152.0	4.125	104.7	12.62	320.7
1494VM50	250A	JD, JDB, JDC, HJD, HMCP	-	10.0	254.0	4.125	104.7	12.09	307.1
1494VM60	400A	KD, KDB, KDC, HKD, HMCP	-	10.125	257.0	5.5	140.0	14.27	362.5

\* Does not include space for optional auxiliary switch.

**Note:**

1. For applications above 200A, please contact your local Rittal representative.

**TS/PS Freestanding FMD Enclosures**

Square D Class 9422 Disconnects/Circuit Breakers (Fig. A pg. FMD 28)									
Square D Part No.	Amp rating	Fuse clip	Fuse class	DH		DW*		When HL=346.1 (13.62)	
				inches	mm	inches	mm	inches	mm
				W	W	W	W		
TCN30	30A	Unfused	-	3.8	96.52	6.2	157.48	12.02	305.3
TCF30	30A	30A-250V	H, K, R	5.42	137.79	6.2	157.48	12.02	305.3
TCF33	30A	30A-600V	H, K, R	8.05	204.4	6.2	157.48	12.02	305.3
TCF33	30A	30A-600V	J	5.42	137.79	6.2	157.48	12.02	305.3
TCF33	30A	60A-250V	H, K, R	6.05	153.6	6.2	157.48	12.02	305.3
TDN60	60A	Unfused	-	3.8	96.52	6.2	157.48	12.02	305.3
TDF60	60A	60A-250V	H, K, R	6.05	153.6	6.2	157.48	12.02	305.3
TDF60	60A	30A-600V	H, K, R	8.05	204.4	6.2	157.48	12.02	305.3
TDF63	60A	60A-600V	H, K, R	8.55	217.17	6.2	157.48	12.02	305.3
TDF63	60A	60A-600V	J	5.42	137.79	6.2	157.48	12.02	305.3
TEN10	100A	Unfused	-	3.8	96.52	6.2	157.48	12.02	305.3
TEF10	100A	100A-250V	H, K, R	8.25	209.55	6.2	157.48	12.02	305.3
TEF10	100A	100A-600V	H, K, R	10.25	260.35	6.2	157.48	12.02	305.3
TEF10	100A	100A-600V	J	7.05	179.07	6.2	157.48	12.02	305.3
TF1	200A	Unfused	-	5.25	133.35	11.63	295.4	10.37	263.3
TF2	200A	200A-250V	H, K, R	11.2	284.48	11.63	295.4	10.37	263.3
TF2	200A	200A-600V	H, K, R	13.7	347.98	11.63	295.4	10.37	263.3
TF2	200A	200A-600V	J	9.83	249.68	11.63	295.4	10.37	263.3
TF3	200A	400A-600V	J	14.25	361.95	11.63	295.4	10.37	263.3
RG1	75, 100A	GJL	CB	3.75	95.2	3.54	90	12.62	320.5
RN1	100A	FAL, FHL	CB	8.03	203.9	4.5	114.0	13.15	334.01
RP1	250A	KAL, KHL	CB	9.66	245.3	4.5	114.0	13.15	334.01

\* DW dimension without operating mechanism.

**Note:**

1. For applications above 200A, please contact your local Rittal representative.



**TS/PS Freestanding FMD Enclosures**

General Electric STDA Disconnects (Fig. A pg. FMD 28)									
GE Operating Mechanism Part No.	Amp rating	Fuse clip	Fuse class	DH		DW		When HL=346.1 (13.63)	
				inches	mm	inches	mm	inches	mm
				W		W		W	
TDOM1A	30A	Unfused	-	3.75	95.2	5.7	144.4	9.97	253.3
TDOM1A	30A	30A-250V	H, R	5.6	142.8	5.7	144.4	9.97	253.3
TDOM1B	30A	30A-600V	H, R	8.6	219	5.7	144.4	9.97	253.3
TDOM1B	30A	60A-250V	H, R	7	177.8	5.7	144.4	9.97	253.3
TDOM1B	30A	60A-600V	H, R	9.5	241.3	5.7	144.4	9.97	253.3
TDOM1A	60A	Unfused	-	4.06	103.1	5.7	144.4	9.97	253.3
TDOM1B	60A	60A-250V	H, R	7	177.8	5.7	144.4	9.97	253.3
TDOM1B	60A	60A-600V	H, R	9.5	241.3	5.7	144.4	9.97	253.3
TDOM1B	60A	100A-250V	H, R	8.4	213.5	5.7	144.4	9.97	253.3
TDOM1B	60A	100A-600V	H, R	10.4	264.3	5.7	144.4	9.97	253.3
TDOM1A	100A	Unfused	-	4.1	104.7	5.7	144.4	9.97	253.3
TDOM1B	100A	100A-250V	H, R	8.4	213.5	5.7	144.4	9.97	253.3
TDOM1B	100A	100A-600V	H, R	10.4	264.3	5.7	144.4	9.97	253.3
TDOM1B	100A	200A-250V	H, R	13.9	353.2	5.7	144.4	9.97	253.3
TDOM1B	100A	200A-600V	H, R	16.4	416.7	5.7	144.4	9.97	253.3
TDOM2	200A	Unfused	-	7.59	192.8	8.78	223	9.97	253.3
TDOM2	200A	200A-250V	H, R	13.9	353.2	8.78	223	9.97	253.3
TDOM2	200A	200A-600V	H, R	16.4	416.7	8.78	223	9.97	253.3

**Note:**  
1. For applications above 200A, please contact your local Rittal representative.

General Electric STDA Circuit Breakers (Fig. A pg. FMD 28)									
GE Operating Mechanism Part No.	Amp rating	Fuse clip	DH		DW		When HL=346.1 (13.63)		
			inches	mm	inches	mm	inches	mm	
			W		W		W		
TDOM1A	150A	TEB, TED, THED	5.59	142	4.1	104.7	11.2	286.6	
TDOM1A	150A	TEC	5.59	142	4.1	104.7	11.2	286.6	
TDOM1B	150A	TB1	9.59	243.6	4.1	104.7	11.2	286.6	
TDOM1B	150A	TEC, TECL	7.46	189.7	4.1	104.7	11.2	286.6	
TDOM1C	150A	TEL	5.59	142	4.1	104.7	11.2	286.6	
TDOM1D	150A	THLC1	8.37	212.7	4.1	104.7	11.63	295.4	
TDOM3	225A	TFJ	8.93	227	4.1	104.7	11.4	290.6	
TDOM3	225A	TFK, THFK, TFL	8.93	227	4.1	104.7	11.4	290.6	
TDOM6	225A	THLC2	10.8	275.4	5.7	145.2	7.03	178.7	

**Note:**  
1. For applications above 200A, please contact your local Rittal representative.

**TS/PS Freestanding FMD Enclosures**

Cutler-Hammer C371 Disconnect Switches (Fig. A pg. FMD 28)									
Cutler-Hammer Part No.	Amp rating	Fuse clip	Fuse class	DH		DW		When HL=346.1 (13.62)	
				inches	mm	inches	mm	inches	mm
				W		W		W	
NC	30A	Unfused	-	3.9	99.18	6	152.4	12.28	311.9
SC21	30A	30A-250V	H, K, R	7.6	194.74	6	152.4	12.28	311.9
SC61	30A	60A-250V	H, K, R	8.16	207.4	6	152.4	12.28	311.9
SC61	30A	30A-600V	H, K, J, R	7.6	194.74	6	152.4	12.28	311.9
ND	60A	Unfused	-	3.9	99.18	6	152.4	12.28	311.9
SD22	60A	Unfused	-	3.9	99.18	6	152.4	12.28	311.9
SD22	60A	60A-250V	H, K, R	8.16	207.4	6	152.4	12.28	311.9
SD62	60A	60A-600V	H, K, R	8.16	207.4	6	152.4	12.28	311.9
SD62	60A	60A-600V	J	7.79	197.9	6	152.4	12.28	311.9
NE	100A	Unfused	-	8.9	226.05	7	187.5	11.61	294.8
SE263	100A	100A-250V	H, K, R	8.9	226.05	7	187.5	11.61	294.8
SE263	100A	100A-600V	H, K, R	8.9	226.05	7	187.5	11.61	294.8
SE263	100A	100A-600V	J	8.9	226.05	7	187.5	11.61	294.8
NF	200A	Unfused	-	13.1	333.8	9.75	247.6	8.36	212.47
SF264	200A	200A-250V	H, K, R	13.1	333.8	9.75	247.6	8.36	212.47
SF264	200A	200A-600V	H, K, R	13.1	333.8	9.75	247.6	8.36	212.47
SF2664	200A	200A-600V	J	13.1	333.8	9.75	247.6	8.36	212.47

**Note:**  
1. For applications above 200A, please contact your local Rittal representative.  
2. DH dimension includes the lowering mechanism.

Cutler-Hammer C371 Circuit Breaker Operators (Fig. A pg. FMD 28)									
Cutler-Hammer Part No.	Amp rating	Frame type	DH		DW		When HL=346.1 (13.63)		
			inches	mm	inches	mm	inches	mm	
			W		W		W		
C371E	150A	Cutler-Hammer EHD, FDB, FD, FDC, HFD	5.33	135.3	4.125	105	12.95	328.9	
C371E	150A	Westinghouse F Frame/Series C	5.33	135.3	4.125	105	12.95	328.9	
C371F	225A	Cutler-Hammer HJD, JD, JDC	5.37	136.5	10	254	12.99	330	
C371F	250A	Westinghouse J Frame/Series C	5.37	136.5	10	254	12.99	330	

**Note:**  
1. For applications above 200A, please contact your local Rittal representative.

**TS/PS Freestanding FMD Enclosures**

ITE Max-Flex Operators for Disconnect Switches (Fig. A pg. FMD 34)											
Switch Operator Part No.	Max-Flex variable depth complete handle mechanism	Fixed depth complete handle mechanism	Amp rating	Fuse kit	Fuse class	Panel space requirements					
						A		B		C	
						inches	mm	inches	mm	inches	mm
MCS603R MCS603L	FHOS06036R FHOS06036L	FDFS06R	30A	No fuse	-	6.13	155.7	5.52	140.2	-	-
			30A	30A, 250V	H, R	6.13	155.7	5.52	140.2	8.11	205.9
			30A	30A, 600V	H, R	6.13	155.7	5.52	140.2	10.11	256.7
			30A	30A, 600V	J	6.13	155.7	5.52	140.2	8.48	215.3
MCS606R MCS606L	FHOS06036R FHOS06036L	FDFS06R	60A	No fuse	-	6.13	155.7	5.52	140.2	-	-
			60A	60A, 250V	H, R	6.13	155.7	5.52	140.2	7.86	199.6
			60A	60A, 600V	H, R	6.13	155.7	5.52	140.2	10.38	263.6
			60A	60A, 600V	J	6.13	155.7	5.52	140.2	8.35	212.0
MCS610R MCS610L	FHOS06036R FHOS06036L	FDFS06R	100A	No fuse	-	7.38	187.4	7.59	192.7	-	-
			100A	100A, 250V	H, R	7.38	187.4	7.59	192.7	11.85	300.9
			100A	100A, 600V	H, R	7.38	187.4	7.59	192.7	13.85	351.7
			100A	100A, 600V	J	7.38	187.4	7.59	192.7	10.6	269.2
MCS620R MCS620L	FHOS20036R FHOS20036L	FDFS20R	200A	No fuse	-	9.17	232.9	9.00	228.6	-	-
			200A	200A, 250V	H, R	9.17	232.9	9.00	228.6	14.7	373.3
			200A	200A, 600V	H, R	9.17	232.9	9.00	228.6	17.2	436.8
			200A	200A, 600V	J	9.17	232.9	9.00	228.6	13.32	338.3

- Note:**
- To order Class R fuse kit, you must order Class H fuse kit and corresponding Class R fuse conversion kit.
  - Max-Flex standard cable length is 36 inches. Alternate cable lengths are available by special order.
  - Maximum length with Class H and R fuses.

Maximum E Dimension For ITE Max-Flex With Disconnect Switch (Fig. B pg. FMD 34)											
Part No.	Cable Part No.	When enclosure depth = MPL standard position									
		When		When		When		When		When	
		13.87 (350)= 11.77 (299) inches	15.75 (400)= 13.74 (349) mm	19.69 (500)= 17.67 (449) inches	23.62 (600)= 21.61 (549) mm	31.5 (800)= 29.48 (749) inches	mm	mm	mm	mm	mm
MCS603, MCS606, MCS610	FHOEC036	13.5	342.9	8.0	203.2	-	-	-	-	-	-
MCS620	FHOEC036	12.5	317.5	7.0	177.8	-	-	-	-	-	-

Fixed Depth Flange Mounted Handle With ITE Disconnect Switch (Fig. C pg. FMD 34)											
Part No.	Handle Part No.	Dimension									
		X1		X2		Y1		Y2		Z1*	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
MCS603, MCS606	FDFS06R	3.52	89.4	1.5	38.1	0.0	0.0	1.89	48.0	6.44	163.5
MCS610	FDFS06R	3.91	99.3	1.81	45.9	0.13	3.3	3.0	76.2	6.44	163.5
MCS620	FDFS20R	1.51	38.3	7.86	199.6	0.38	9.6	5.44	138.1	10.93	277.6

\* Z1 is the distance between the enclosure door and MPL.

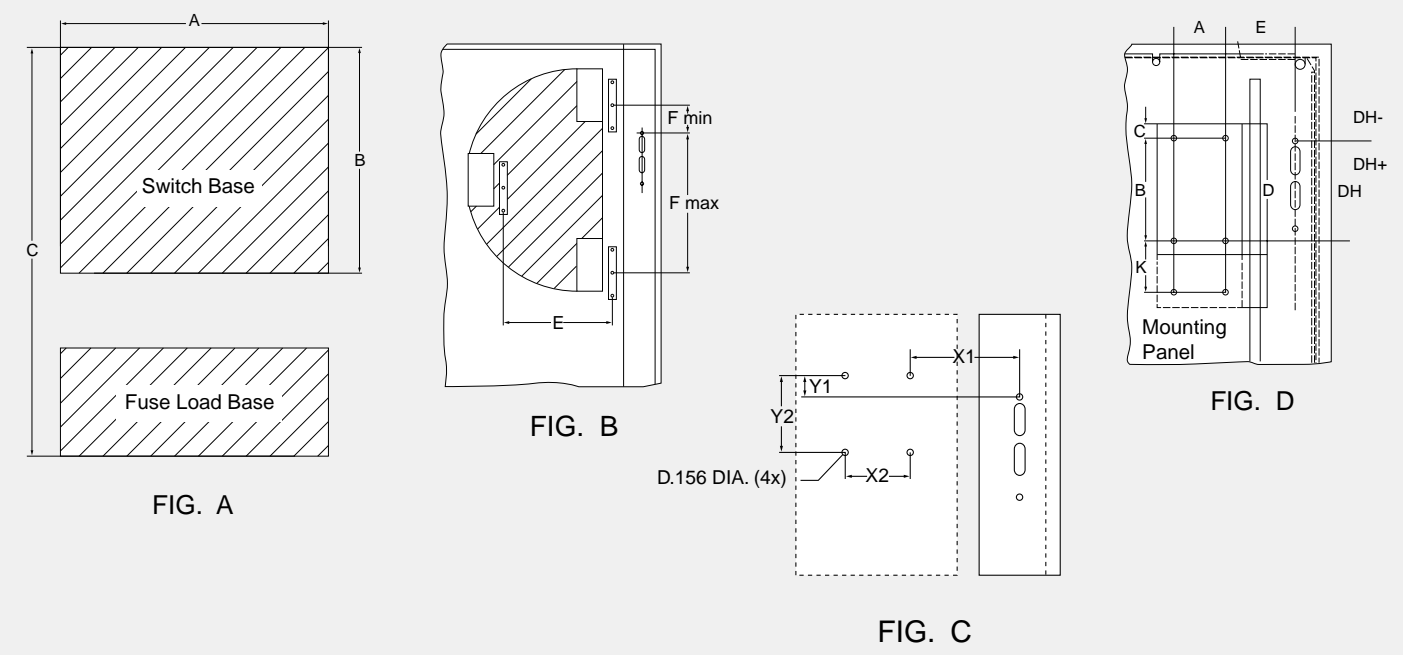
**TS/PS Freestanding FMD Enclosures**

ITE Max-Flex Operators For Circuit Breakers			
Breaker Operator Part No.	Amp rating	Circuit breaker frame size	For use with breaker type(s)
FHOE036	125	ED, HED, EF (CE)	ED2, ED4, ED6, HED4, HED6, ED6, ETI, HHED6 EFC
FHOE036	125	ED, HED, EF (CE)	CED6, CED6 ETI, EFF
FHOF036	250	ED, HED, FF (CE)	FXD6-A, FD6-A, HFD6, HFXD6, HHFD6, FD6 ETI, FFC, FFF
FHOE036	250	CFD	CFD6, CFD6 ETI

- Note:**
- For applications above 200A, please contact your local Rittal representative.

ITE Circuit Breaker Mounting Dimensions (Fig. D pg. FMD 34)														
Circuit Breaker	Amp rating	Dimensions												
		A		B		C		D		K		DH (normal)		Tap
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	size
ED, HED, EF	125	1.0	25.4	5.0	127.0	0.65	16.5	6.33	160.7	-	-	6.81	172.9	#8-32
CED, EF	125	1.0	25.4	5.0	127.0	0.65	16.5	9.58	243.3	3.21	81.5	6.81	172.9	#8-32
FXD, FD, HFD, HFXD, FF	250	1.5	38.1	7.5	190.5	1.0	25.4	9.5	241.3	-	-	6.78	172.2	#1/4 20
CFD	250	1.5	38.1	7.5	190.5	1.0	25.4	14.25	361.9	4.6	117.4	6.78	172.2	#1/4 20

ITE Maximum "E" Dimension For ITE Max-Flex With Circuit Breaker (Fig. D pg. FMD 34)											
Cable Part No.	Frame Size	Enclosure depth= MPL position									
		When 8.27 (210.0)= 7.24 (184.0)		When 9.84 (250.0)= 8.82 (224.0)		When 11.81 (300.0)= 10.78 (274.0)		When 13.87 (350.0)= 12.75 (324.0)		When 15.75 (400.0)= 10.75 (273.0)	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
FHOEC036	ED, HED, CED, EF	11.2	284.4	11.0	279.4	10.5	266.7	8.3	210.8	10.5	266.7
FHOEC036	FXD, FD, HFD, HFXD, FF, CFD	11.2	284.4	11.0	279.4	10.5	266.7	8.3	210.8	10.5	266.7









### NEMA 4/4X And NEMA 12 Wallmount Enclosures

For HS, SA Enclosures: Siemens ITE Max-Flex Operators for Disconnect Switches (Fig. A pg. FMD 40)											
Switch Part No.	Max-Flex variable depth Complete handle mechanism	Fixed depth Complete handle mechanism	Amp rating	Fuse kit	Fuse class	Panel space requirements					
						A		B		C	
						inches	mm	inches	mm	inches	mm
MCS603R MCS603L	FHOS06036R FHOS06036L	FDFS06R	30	No fuse	-	6.13	155.7	5.52	140.2	-	-
				30A, 250V	H, R	6.13	155.7	5.52	140.2	8.11	205.9
				30A, 600V	H, R	6.13	155.7	5.52	140.2	10.11	256.7
				30A, 600V	J	6.13	155.7	5.52	140.2	8.48	215.3
MCS606R MCS606L	FHOS06036R FHOS06036L	FDFS06R	60	No fuse	-	6.13	155.7	5.52	140.2	-	-
				60A, 250V	H, R	6.13	155.7	5.52	140.2	7.86	199.6
				60A, 600V	H, R	6.13	155.7	5.52	140.2	10.38	263.6
				60A, 600V	J	6.13	155.7	5.52	140.2	8.35	212
MCS610R MCS610L	FHOS06036R FHOS06036L	FDFS06R	100	No fuse	-	7.38	187.4	7.59	192.7	-	-
				100A, 250V	H, R	7.38	187.4	7.59	192.7	11.85	300.9
				100A, 600V	H, R	7.38	187.4	7.59	192.7	13.85	351.7
				100A, 600V	J	7.38	187.4	7.59	192.7	10.6	269.2
MCS620R MCS620L	FHOS20036R FHOS20036L	FDFS20R	200	No fuse	-	9.17	232.9	9.00	228.6	-	-
				200A, 250V	H, R	9.17	232.9	9.00	228.6	14.7	373.3
				200A, 600V	H, R	9.17	232.9	9.00	228.6	17.2	436.8
				200A, 600V	J	9.17	232.9	9.00	228.6	13.32	338.3

\*To order Class R fuse kit, you must order Class H fuse kit and corresponding Class R fuse conversion kit.  
 \*Max-Flex standard cable length is 36 inches. Alternate cable lengths are available by special order.  
 \*Maximum length with Class H and R fuses.

For HS, SA Enclosures: Maximum "E" Dimension For ITE Max-Flex With Disconnect Switch (Fig. B pg. FMD 40)													
Switch Part No.	Cable Part No.	Enclosure depth											
		When E=8 (203.2)		When E=10 (254)		When E=12 (304.8)		When E=16 (406.4)		When E=18 (457.2)		When E=20 (508)	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
MCS603, MCS606, MCS610	FHOEC036	16.0	406	13.0	330	13.5	343	8.0	203	-	-	-	-
	FHOEC048	16	660.4	16	660.4	16	660.4	23	584.2	21	533.4	18	457.2
MCS620	FHOJC036	15	381	12.0	304	12.5	317	7.0	178	-	-	-	-
	FHOJC046	25	635	25	635	25	635	22	558.8	20	508	17	431.8

For HS, SA Enclosures: Maximum "E" Dimension For ITE Max-Flex With Disconnect Switch (Fig. B pg. FMD 40) (Continued)									
Enclosure depth		36" Cable				46" Cable			
		Fmin		Fmax		Fmin		Fmax	
inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
8	203.2	7	177.8	14.5	368.3	16.1	408.94	23.9	607.06
10	254	5.5	139.7	13.1	332.74	16	406.4	23.6	599.44
12	304.8	5	127	12	304.8	15.9	403.86	220.8	579.12
16	406.4	4	101.6	9.4	238.76	14.7	373.38	22	558.8
18	457.2	-	-	-	-	14.6	370.84	21.9	556.26
20	508	-	-	-	-	13.3	337.82	19.9	505.46
24	609.6	-	-	-	-	12	304.8	16.9	429.26

Maximum "E" dimension only if F=4.6 (116.8)

For HS, SA Enclosures: ITE Max-Flex Operators for Disconnect Switch (Fig. C, D pg. FMD 40)											
Switch Part No.	Handle Part No.	Dimensions — see fig. C, D									
		X1		X2		Y1		Y2		Z1*	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
MCS603, MCS606	FDFS06R	3.52	89.4	1.5	38.1	0.0	0.0	1.89	48	6.44	163.5
	FDFS06R	3.91	99.3	1.81	45.9	0.13	3.3	3.0	76.2	6.44	163.5
MCS620	FDFS06R	1.51	38.3	7.86	199.6	0.38	9.6	5.44	138.1	10.93	277.6

\* Z1 is the distance between the disconnect mounting surface and MPL (mounting panel); compare with Usable Depth value from page 1. (mechanical adjustments required if Z1 and Usable Depth not equal)

### NEMA 4/4X And NEMA 12 Wallmount Enclosures

Maximum "E" Dimension For ITE Max-Flex With Circuit Breaker (Fig. E pg. FMD 40)																	
Cable Part No.	Frame size	When enclosure depth=8 (203.2)		When enclosure depth=10 (254)		When enclosure depth=12 (304.8)		When enclosure depth=16 (406.4)		When enclosure depth=18 (457.2)		When enclosure depth=20 (508)		When enclosure depth=24 (609.6)		When enclosure depth=30 (762)	
		E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
FHOEC036	ED, HED, CED, EF	13.8	203.2	13.5	203.2	13	203.2	10.7	203.2	8.7	203.2	5.3	203.2	-	-	-	-
	FXD, FD, HFD, CFD, HFXD, FF	11.2	203.2	11	203.2	10.5	203.2	8.3	203.2	5.5	203.2	3.5	203.2	-	-	-	-

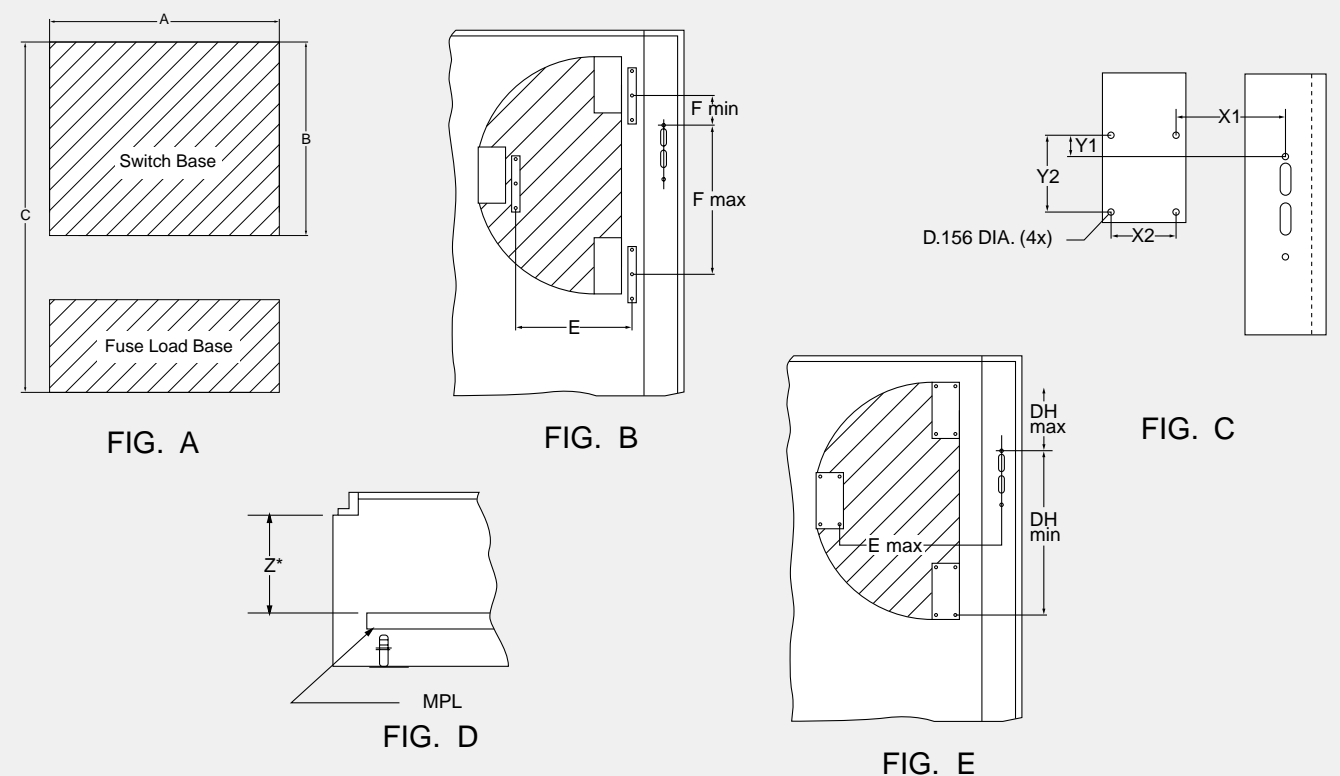
Maximum "E" dimension only if F=116.8 (4.6).

For HS, SA Enclosures: ITE Max-Flex Operators For Circuit Breakers			
Breaker Operator Catalog No.	Amp rating	Circuit breaker frame size	For use with breaker type(s)
FHOE036	125	ED, HED, EF (CE)	ED2, ED4, ED6, HED4, HED6, ED6, ETI, HHED6, EFC
FHOE036	125	CED, EF (CE)	CED6, CED6 ETI, EFF
FHOF036	250	FD, FXD, HFD, HFXD, FF (CE)	FXD6-A, FD6-A, HFD6, HFXD6, HHFD6, FD6 ETI, FFC, FFF
FHOF036	250	CFD	CFD6, CFD6 ETI

\* For applications above 200A, please contact your local Rittal representative.

Circuit Breaker Mounting Dimensions															
Circuit Breaker Frame Size	Amp rating	See fig. E													
		A		B		C		D*		K		DH (normal)		Tap size	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm		
ED, HED, EF, CED	125	1.0	25.4	5.0	127	0.65	16.5	6.33	160.7	-	-	6.81	172.9	#8-32	
CED6, CED6-ETI	125	1.0	25.4	5.0	127	0.65	16.5	8.93	226.8	3.25	82.5	6.81	172.9	#8-32	
FXD, FD, HFD, HFXD, FF	250	1.5	38.1	7.5	190.5	1.0	25.4	9.5	241.3	-	-	6.78	172.2	#1/4 20	
CFD	250	1.5	38.1	7.5	190.5	1.0	25.4	14.25	361.9	4.6	117.4	6.78	172.2	#1/4 20	

\* For applications above 200A, please contact your local Rittal representative.



### NEMA 12 Freestanding Enclosures (XM)

NEMA 12 Freestanding Carbon Steel Heavy Duty Single Door Disconnect Enclosures																									
Part No.	height/width/depth						Door size				Panel size				Usable depth		See figure A for illustration								
	inches			mm			inches		mm		inches		mm		inches		mm		inches			mm			
	A	B	C	A	B	C	J	K	J	K	E	F	E	F	C	CL	HL	H	PE	CL	HL	H	PE		
E 72XM3418WP	72	33.5	18	1828.8	850.9	457.2	62.5	29.83	1587.5	757.7	60	27.75	1524	704.9	18	457.2	-	9.125	3.875	2.5	-	231.8	98.4	63.5	
E 84XM4018WP	84	39.5	18	2133.6	1003.3	457.2	74.5	35.83	1892.3	910.1	72	33.75	1828.8	857.3	18	457.2	-	14.625	3.875	2.438	-	371.5	98.4	61.9	
E 84XM7818WP	84	77.75	18	2133.6	1892.3	457.2	74.5	35.83	1892.3	911.4	72	72	1828.8	1828.8	17	431.8	1.375	14.625	3.688	2.5	34.9	371.5	93.7	63.5	

### NEMA 12 Floormount Enclosures (X)

NEMA 12 Floormount Carbon Steel Enclosures																		
Part No.	height/width/depth						Door size				Mounting Panel Part No.	Mounting panel size				Usable depth		
	inches			mm			inches		mm			inches		mm		inches		mm
	A	B	C	A	B	C	J	K	J	K	E	F	E	F	G	G	G	G
E 60X4912	60	49.38	12	1524.0	1254.3	304.8	58.5	21.88	1485.9	555.8	E 60P48	56	44	1422.4	1117.6	12	304.8	
E 60X6112	60	61.38	12	1524.0	1559.1	304.8	58.5	27.88	1485.9	708.2	E 60P60	56	56	1422.4	1422.4	12	304.8	
E 72X6112	72	61.38	12	1828.8	1559.1	304.8	70.5	27.88	1790.7	708.2	E 72P60	68	56	1727.2	1422.4	12	304.8	
E 72X7312	72	73.38	12	1828.8	1863.9	304.8	70.5	33.88	1790.7	860.6	E 72P72	68	68	1727.2	1727.2	12	304.8	
E 60X4918	60	49.38	18	1524.0	1254.3	457.2	58.5	21.88	1485.9	555.8	E 60P48	56	44	1422.4	1117.6	18	457.2	
E 60X6118	60	61.38	18	1524.0	1559.1	457.2	58.5	27.88	1485.9	708.2	E 60P60	56	56	1422.4	1422.4	18	457.2	
E 72X6118	72	61.38	18	1828.8	1559.1	457.2	70.5	27.88	1790.7	708.2	E 72P60	68	56	1727.2	1422.4	18	457.2	
E 72X7318	72	73.38	18	1828.8	1863.9	457.2	70.5	33.88	1790.7	860.6	E 72P72	68	68	1727.2	1727.2	18	457.2	

NEMA 12 Floormount Carbon Steel Enclosures (Continued)									
Part No.	See fig. A								
	inches				mm				
	CL	HL	H	PE	CL	HL	H	PE	
E 60X4912	1.375	5.125	1.875	2.5	34.9	130.2	47.6	63.5	
E 60X6112	1.375	5.125	1.875	2.5	34.9	130.2	47.6	63.5	
E 72X6112	1.375	10.625	1.875	2.5	34.9	269.9	47.6	63.5	
E 72X7312	1.375	10.625	1.875	2.5	34.9	269.9	47.6	63.5	
E 60X4918	1.375	5.125	1.875	2.5	34.9	130.2	47.6	63.5	
E 60X6118	1.375	5.125	1.875	2.5	34.9	130.2	47.6	63.5	
E 72X6118	1.375	10.625	1.875	2.5	34.9	269.9	47.6	63.5	
E 72X7318	1.375	10.625	1.875	2.5	34.9	269.9	47.6	63.5	

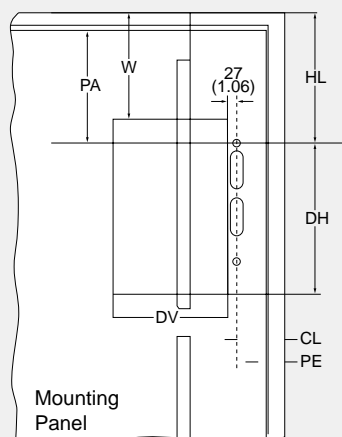


FIG. A

### NEMA 12 Freestanding And Floormount Enclosures

For X, XM Enclosures: Allen-Bradley 1494V Disconnects/Circuit Breakers (Fig. A pg. FMD 41)																	
Allen Bradley Part No.	Amp rating	Fuse clip	Fuse class	DH		DW*		X HL=5.125 (130.2)		X HL=10.625 (269.8)		XM HL=9.125 (231.7)		XM HL=14.625 (371.4)		XM HL=17.594 (446.8)	
				inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
				W	W	W	W	W	W	W	W	W	W	W	W		
1494V-DS30	30A	Unfused	-	3.87	98.3	7.12	180.8	6.045	153.5	11.545	293.2	10.045	255.1	15.545	394.8	18.514	470.3
1494V-DS30	30A	30A-250V	H,K,R	5.19	131.8	7.12	180.8	6.045	153.5	11.545	293.2	10.045	255.1	15.545	394.8	18.514	470.3
1494V-DS30	30A	30A-600V	H,K,R	7.96	202.2	7.12	180.8	6.045	153.5	11.545	293.2	10.045	255.1	15.545	394.8	18.514	470.3
1494V-DS30	30A	30A-600V	J	5.19	131.8	7.12	180.8	6.045	153.5	11.545	293.2	10.045	255.1	15.545	394.8	18.514	470.3
1494V-DS30	30A	60A-250V	H,K,R	5.41	137.4	7.12	180.8	6.045	153.5	11.545	293.2	10.045	255.1	15.545	394.8	18.514	470.3
1494V-DS30	30A	60A-600V	H,K,R	8.47	215.1	7.12	180.8	6.045	153.5	11.545	293.2	10.045	255.1	15.545	394.8	18.514	470.3
1494V-DS30	30A	60A-600V	J	5.3	134.6	7.12	180.8	6.045	153.5	11.545	293.2	10.045	255.1	15.545	394.8	18.514	470.3
1494V-DS60	60A	Unfused	-	3.87	98.3	7.12	180.8	5.855	148.7	11.355	288.4	9.855	250.3	15.355	390	18.324	465.4
1494V-DS60	60A	60A-250V	H,K,R	5.41	137.4	7.12	180.8	5.855	148.7	11.355	288.4	9.855	250.3	15.355	390	18.324	465.4
1494V-DS60	60A	60A-600V	H,K,R	8.47	215.1	7.12	180.8	5.855	148.7	11.355	288.4	9.855	250.3	15.355	390	18.324	465.4
1494V-DS60	60A	60A-600V	J	5.3	134.6	7.12	180.8	5.855	148.7	11.355	288.4	9.855	250.3	15.355	390	18.324	465.4
1494V-DS60	60A	30A-600V	H,K,R	7.96	202.2	7.12	180.8	5.855	148.7	11.355	288.4	9.855	250.3	15.355	390	18.324	465.4
1494V-DS60	60A	100A-250V	H,K	8.86	225.0	7.12	180.8	5.855	148.7	11.355	288.4	9.855	250.3	15.355	390	18.324	465.4
1494V-DS60	60A	100A-600V	H,K	10.8	274.3	7.12	180.8	5.855	148.7	11.355	288.4	9.855	250.3	15.355	390	18.324	465.4
1494V-DS60	60A	100A-600V	J	7.6	193.0	7.12	180.8	5.855	148.7	11.355	288.4	9.855	250.3	15.355	390	18.324	465.4
1494V-DS100	100A	Unfused	-	3.8	96.5	7.12	180.8	5.685	144.4	11.185	284.1	9.685	246	15.185	385.7	18.154	461.1
1494V-DS100	100A	100A-250V	H,K,R	9.6	243.8	7.12	180.8	5.685	144.4	11.185	284.1	9.685	246	15.185	385.7	18.154	461.1
1494V-DS100	100A	100A-600V	H,K,R	11.6	294.6	7.12	180.8	5.685	144.4	11.185	284.1	9.685	246	15.185	385.7	18.154	461.1
1494V-DS100	100A	100A-600V	J	8.3	210.8	7.12	180.8	5.685	144.4	11.185	284.1	9.685	246	15.185	385.7	18.154	461.1
1494V-DS100	100A	200A-250V	H,K	12.4	315.0	7.12	180.8	5.685	144.4	11.185	284.1	9.685	246	15.185	385.7	18.154	461.1
1494V-DS100	100A	200A-600V	H,K	14.9	378.5	7.12	180.8	5.685	144.4	11.185	284.1	9.685	246	15.185	385.7	18.154	461.1
1494V-DS100	100A	200A-600V	J	11.03	280.2	7.12	180.8	5.685	144.4	11.185	284.1	9.685	246	15.185	385.7	18.154	461.1
1494V-DS200	200A	Unfused	-	4.6	116.8	8.4	213.4	-	-	9.835	249.8	8.335	211.7	13.835	351.4	16.804	462.8
1494V-DS200	200A	200A-250V	H,K,R	11.8	299.7	8.4	213.4	-	-	9.835	249.8	8.335	211.7	13.835	351.4	16.804	462.8
1494V-DS200	200A	200A-600V	H,K,R	14.3	363.2	8.4	213.4	-	-	9.835	249.8	8.335	211.7	13.835	351.4	16.804	462.8
1494V-DS200	200A	200A-600V	J	10.4	264.2	8.4	213.4	-	-	9.835	249.8	8.335	211.7	13.835	351.4	16.804	462.8
1494V-M40	150A	EHD, FD, FDB, FDC, HFD, HMCP	-	5	127.0	4.125	104.8	7.035	178.7	12.535	318.4	11.035	280.3	16.535	420	19.504	495.4
1494V-M50	250A	JD, JDB, JDC, HJD, HMCP	-	7.65	194.3	4.125	104.8	-	-	10.975	278.8	9.475	240.7	14.975	380.4	17.944	455.8
1494V-M60	400A	KD, KDB, KDC, HKD, HMCP	-	8.3	210.8	5.5	139.7	-	-	8.575	217.8	7.075	179.7	12.575	319.4	15.544	394.8

\* Does not include space for optional auxiliary switch.

**Note:**

- For applications above 200A, please contact your local Rittal representative.





### NEMA 12 Freestanding And Floormount Enclosures

For X, XM Enclosures: Siemens ITE Max-Flex Operators for Disconnect Switches (Fig. A pg. FMD 46)											
Switch Part No.	Max-Flex variable depth complete handle mechanism	Fixed depth complete handle mechanism	Amp rating	Fuse kit	Fuse class	Panel space requirements					
						A		B		C	
						inches	mm	inches	mm	inches	mm
MCS603R MCS603L	FHOS06036R FHOS06036L	FDFS06R	30	No fuse	-	6.13	155.7	5.52	140.2	-	-
				30A, 250V	H, R	6.13	155.7	5.52	140.2	8.11	205.9
				30A, 600V	H, R	6.13	155.7	5.52	140.2	10.11	256.7
MCS606R MCS606L	FHOS06036R FHOS06036L	FDFS06R	60	No fuse	-	6.13	155.7	5.52	140.2	-	-
				60A, 250V	H, R	6.13	155.7	5.52	140.2	7.86	199.6
				60A, 600V	H, R	6.13	155.7	5.52	140.2	10.38	263.6
MCS610R MCS610L	FHOS06036R FHOS06036L	FDFS06R	100	No fuse	-	7.38	187.4	7.59	192.7	-	-
				100A, 250V	H, R	7.38	187.4	7.59	192.7	11.85	300.9
				100A, 600V	H, R	7.38	187.4	7.59	192.7	13.85	351.7
MCS620R MCS620L	FHOS20036R FHOS20036L	FDFS20R	200	No fuse	-	9.17	232.9	9.00	228.6	-	-
				200A, 250V	H, R	9.17	232.9	9.00	228.6	14.7	373.3
				200A, 600V	H, R	9.17	232.9	9.00	228.6	17.2	436.8
				200A, 600V	J	9.17	232.9	9.00	228.6	13.32	338.3

\*To order Class R fuse kit, you must order Class H fuse kit and corresponding Class R fuse conversion kit.

\*Max-Flex standard cable length is 36 inches. Alternate cable lengths are available by special order.

\*Maximum length with Class H and R fuses.

For X, XM Enclosures: Maximum "E" Dimension For ITE Max-Flex With Disconnect Switch (Fig. B pg. FMD 46)													
Switch Part No.	Cable Part No.	Enclosure depth											
		When E=8 (203.2)		When E=10 (254)		When E=12 (304.8)		When E=16 (406.4)		When E=18 (457.2)		When E=20 (508)	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
MCS603, MCS606, MCS610	FHOEC036	16.0	406	13.0	330	13.5	343	8.0	203	-	-	-	-
	FHOEC048	16	660.4	16	660.4	16	660.4	23	584.2	21	533.4	18	457.2
MCS620	FHOJC036	15	381	12.0	304	12.5	317	7.0	178	-	-	-	-
	FHOJC046	25	635	25	635	25	635	22	558.8	20	508	17	431.8

For X, XM Enclosures: Maximum "E" Dimension For ITE Max-Flex With Disconnect Switch (Fig. B pg. FMD 46) (Continued)									
Enclosure depth		36" Cable				46" Cable			
		Fmin		Fmax		Fmin		Fmax	
inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
8	203.2	7	177.8	14.5	368.3	16.1	408.94	23.9	607.06
10	254	5.5	139.7	13.1	332.74	16	406.4	23.6	599.44
12	304.8	5	127	12	304.8	15.9	403.86	220.8	579.12
16	406.4	4	101.6	9.4	238.76	14.7	373.38	22	558.8
18	457.2	-	-	-	-	14.6	370.84	21.9	556.26
20	508	-	-	-	-	13.3	337.82	19.9	505.46
24	609.6	-	-	-	-	12	304.8	16.9	429.26

Maximum "E" dimension only if F=4.6 (116.8)

For X, XM Enclosures: ITE Max-Flex Operators for Disconnect Switch (Fig. C, D pg. FMD 46)											
Switch Part No.	Handle Part No.	Dimensions — see fig. C, D									
		X1		X2		Y1		Y2		Z1*	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
MCS603, MCS606	FDFS06R	3.52	89.4	1.5	38.1	0.0	0.0	1.89	48	6.44	163.5
	FDFS06R	3.91	99.3	1.81	45.9	0.13	3.3	3.0	76.2	6.44	163.5
MCS620	FDFS06R	1.51	38.3	7.86	199.6	0.38	9.6	5.44	138.1	10.93	277.6

\* Z1 is the distance between the disconnect mounting surface and MPL (mounting panel); compare with Usable Depth value from page 1. (mechanical adjustments required if Z1 and Usable Depth not equal)

### NEMA 12 Freestanding And Floormount Enclosures

Maximum "E" Dimension For ITE Max-Flex With Circuit Breaker (Fig. E pg. FMD 46)																	
Cable Part No.	Frame size	When enclosure depth=8 (203.2)		When enclosure depth=10 (254)		When enclosure depth=12 (304.8)		When enclosure depth=16 (406.4)		When enclosure depth=18 (457.2)		When enclosure depth=20 (508)		When enclosure depth=24 (609.6)		When enclosure depth=30 (762)	
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
		E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=	E=
FHOEC036	ED, HED, CED, EF	13.8	203.2	13.5	203.2	13	203.2	10.7	203.2	8.7	203.2	5.3	203.2	-	-	-	-
	FXD, FD, HFD, CFD, HFXD, FF	11.2	203.2	11	203.2	10.5	203.2	8.3	203.2	5.5	203.2	3.5	203.2	-	-	-	-

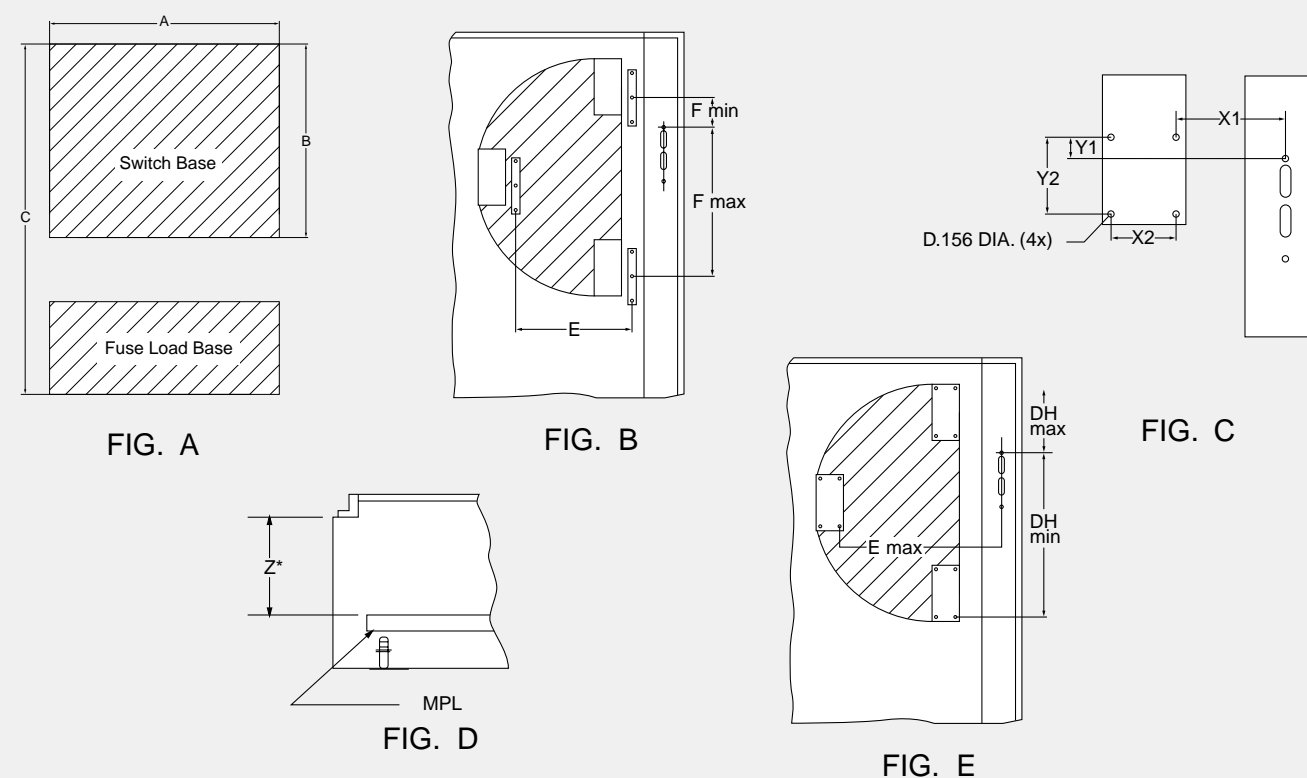
Maximum "E" dimension only if F=116.8 (4.6).

For X, XM Enclosures: ITE Max-Flex Operators For Circuit Breakers			
Breaker Operator Catalog No.	Amp rating	Circuit breaker frame size	For use with breaker type(s)
FHOEC036	125	ED, HED, EF (CE)	ED2, ED4, ED6, HED4, HED6, ED6, ETI, HHED6, EFC
FHOEC036	125	CED, EF (CE)	CED6, CED6 ETI, EFF
FHOF036	250	FD, FXD, HFD, HFXD, FF (CE)	FXD6-A, FD6-A, HFD6, HFXD6, HHFD6, FD6 ETI, FFC, FFF
FHOF036	250	CFD	CFD6, CFD6 ETI

\* For applications above 200A, please contact your local Rittal representative.

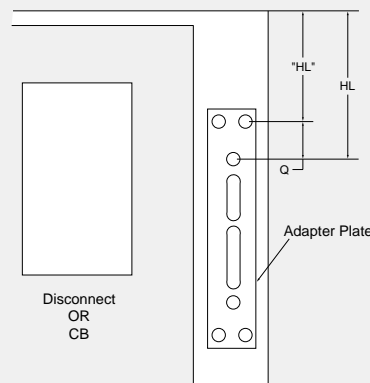
Circuit Breaker Mounting Dimensions (Fig. E pg. FMD 46)														
Circuit Breaker Frame Size	Amp rating	A		B		C		D*		K		DH (normal)		Tap size
		inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	
ED, HED, EF, CED	125	1.0	25.4	5.0	127	0.65	16.5	6.33	160.7	-	-	6.81	172.9	#8-32
CED6, CED6-ETI	125	1.0	25.4	5.0	127	0.65	16.5	8.93	226.8	3.25	82.5	6.81	172.9	#8-32
FXD, FD, HFD, HFXD, FF	250	1.5	38.1	7.5	190.5	1.0	25.4	9.5	241.3	-	-	6.78	172.2	#1/4 20
CFD	250	1.5	38.1	7.5	190.5	1.0	25.4	14.25	361.9	4.6	117.4	6.78	172.2	#1/4 20

\* For applications above 200A, please contact your local Rittal representative.





Adapter Plate											
Part No.		EAKAB	EAKAB (200A)	EAKITE (1 Slot)	EAKITE (2 Slot)	EAKCHV	EAKWHAMT	EAKSD	EAKABV (1 Slot)	EADABV (2 Slot)	EADKETDA Spring Mount
Q-left	inches	1.07	0.59	2.13	2.50	2.51	1.27	2.41	2.64	2.51	2.51
	mm	27.18	14.99	54.10	63.50	63.75	32.26	61.21	67.06	63.75	63.75
Q-right	inches	1.07	0.62	-	2.75	2.66	3.96	2.76	1.02	2.66	2.97
	mm	27.18	15.75	-	69.85	67.56	100.58	70.10	25.91	67.56	75.44
Part No.		EAKABCHR	EAKABCHR (200A)	EAKWHAMTCHR	EAKSDCHR	EAKGETDACHR	EAKITECHR (1 Slot)	EAKITECHR (2 Slot)	EAKCHVCHR	EAKABVCHR (1 Slot)	EAKABVCHR (2 Slot)
Q-left	inches	0.69	0.59	1.27	2.41	2.51	2.13	2.50	2.51	2.64	2.51
	mm	17.53	14.99	32.26	61.21	63.75	54.10	63.50	63.75	67.06	63.75
Q-right	inches	1.07	0.62	3.96	2.76	2.97	-	2.75	2.66	1.02	2.66
	mm	27.18	15.75	100.58	70.10	75.44	-	69.85	67.56	25.91	67.56



Adapter plate

## Disconnect Ordering Information

### Allen-Bradley

Using 1494V disconnect switch, order:

- \* 1. A disconnect switch (fusible or non-fusible).
- 2. An operating handle.
- 3. A connecting rod.
- 4. A trailer fuse block kit (if required).
- 5. A fuse clip kit (if required).

Using 1494V circuit breaker operating mechanism, order:

- 1. A circuit breaker (General Electric or Westinghouse).
- 2. A circuit breaker operating mechanism.
- 3. An operating handle.
- 4. A connecting rod.
- 5. Accessories (if required).

### General Electric

Using a disconnect switch, order:

- \* 1. A disconnect switch (QMR/QMW).
- \* 2. A fuse clip kit or no-fuse kit.
- \* 3. A flange handle (STDA1).
- \* 4. A variable depth operating mechanism.
- 5. An extended length drive rod (if required).
- 6. Accessories (if required).

Using a circuit breaker, order:

- 1. A circuit breaker.
- 2. A flange handle (STDA1).
- 3. A variable depth operating mechanism.

\* These are available as a disconnect switch assembly from General Electric.

### Cutler-Hammer

Using C361 disconnect switch, order:

- \* 1. A disconnect switch with an operating mechanism.
- \* 2. An operating handle

Using C371 circuit breaker, order:

- 1. A circuit breaker (Cutler-Hammer or Westinghouse).
- \* 2. An operating mechanism.
- \* 3. An operating handle.

\* These are available as an assembly from Cutler-Hammer

### Square D

Using a disconnect switch, order:

- 1. A disconnect switch with operating mechanism.
- 2. An universal handle mechanism.
- 3. An operating rod (if required).

Using a circuit breaker, order:

- 1. A circuit breaker
- 2. An operating mechanism.
- 3. An universal handle mechanism.
- 4. An operating rod (if required).

### ITE

Using flange-mounted operating mechanisms and circuit breakers, order:

- 1. A circuit breaker
- 2. Pressure wire connectors.
- \* 3. A flange-mounted handle.
- \* 4. A circuit breaker operator mechanism.
- \* 5. An operating cable.

\* Available from ITE as a complete mechanism with 914 mm (36") cable only. Order separate different cable lengths.

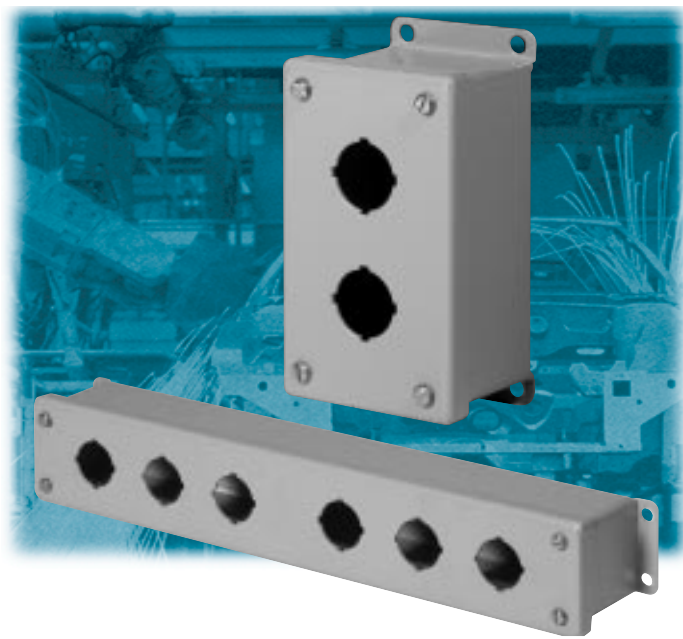
# OPERATOR INTERFACE

## OPERATOR INTERFACE SOLUTIONS

Standard/Slim Pushbutton Boxes .....	HMI 1
Miniature Pushbutton Boxes .....	HMI 2
Extra Deep Pushbutton Boxes .....	HMI 3
Sloping Front Pushbutton Boxes .....	HMI 4
AP Desk Consoles .....	HMI 5-6
Consoles, Pedestals and Bases .....	HMI 7
Series Operator Enclosures .....	HMI 8
PC Computer Enclosures .....	HMI 9-10
VIP Flat Panel Enclosures .....	HMI 11-18
Optipanel HMI Enclosures .....	HMI 19-24
CP Pendant Arm Enclosures .....	HMI 25-26
CP Pendant Arm Systems .....	HMI 27-30
CP-Vertical Pendant Arm Systems .....	HMI 31-32
CP Accessories .....	HMI 33-50
Technical Drawings .....	HMI 51-79



# Standard/Slim Pushbutton Boxes



## NEMA Rated Pushbutton Enclosures

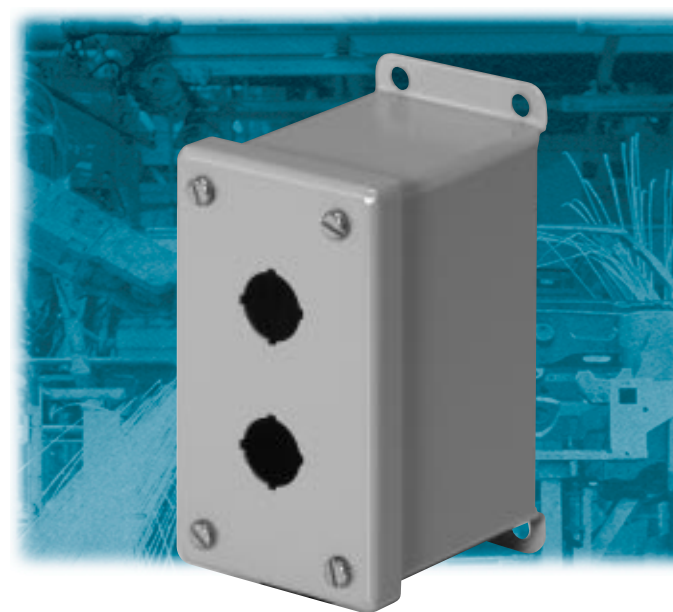
These NEMA rated boxes are designed for indoor use to house pushbuttons, selector switches, pilot lights, etc., and to protect such equipment against dirt, dust, and spraying of water, oil or coolant.

Several models of these pushbutton enclosures can be mounted onto a Rittal Electromate column and base and used as an operator station.



Pages NON 25-26

# Miniature Pushbutton Boxes



## NEMA Rated Pushbutton Enclosures

These NEMA rated boxes are designed for indoor use to house pushbuttons, selector switches, pilot lights, etc., which mount in miniature "4-way" pushbutton holes, and to protect such equipment against dirt, dust, and spraying of water, oil or coolant.

Several models of these pushbutton enclosures can be mounted onto a Rittal Electromate column and base and used as an operator station.



Page NON 27

### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Standard pushbutton holes accept all brands of 30.5 mm "4-way" oil tight pushbuttons, switches, and pilot lights
- Captive plated screws to hold cover
- External mounting brackets

### Technical Specifications

#### Material:

- Enclosure/cover: 14 gauge carbon steel

#### Finish/color:

- Enclosure/cover: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Pages ..... HMI 51-52

### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Standard pushbutton holes accept all brands of 22.5 mm "4-way" oil tight pushbuttons, switches, and pilot lights
- Captive plated screws hold cover
- External mounting brackets

### Technical Specifications

#### Material:

- Enclosure/cover: 14 gauge carbon steel

#### Finish/color:

- Enclosure/cover: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... HMI 53

Standard Pushbutton Box				Accessories
Part No.	Outside dimensions (inches)			Oil tight hole seals
	H	W	D	
E 1PB	3.50	3.25	2.75	See accessories section
E 2PB	5.75	3.25	2.75	See accessories section
E 3PB	8.00	3.25	2.75	See accessories section
E 4PB	10.25	3.25	2.75	See accessories section
E 4SPB	7.25	6.25	3.00	See accessories section
E 5PB	12.50	3.25	2.75	See accessories section
E 6PBVL	14.75	3.25	2.75	See accessories section
E 6PB	9.50	6.25	3.00	See accessories section
E 8PB	20.25	3.25	2.75	See accessories section
E 9PB*	9.50	8.50	3.00	See accessories section

\* Can be mounted to a Rittal Electromate column and base.

Slim Pushbutton Box				Accessories
Part No.	Outside dimensions (inches)			Oil tight hole seals
	H	W	D	
E 1PBSL	4.00	2.50	2.50	See accessories section
E 2PBSL	6.25	2.50	2.50	See accessories section
E 3PBSL	8.50	2.50	2.50	See accessories section
E 4PBSL	10.75	2.50	2.50	See accessories section
E 6PBSL*	16.25	2.50	2.50	See accessories section

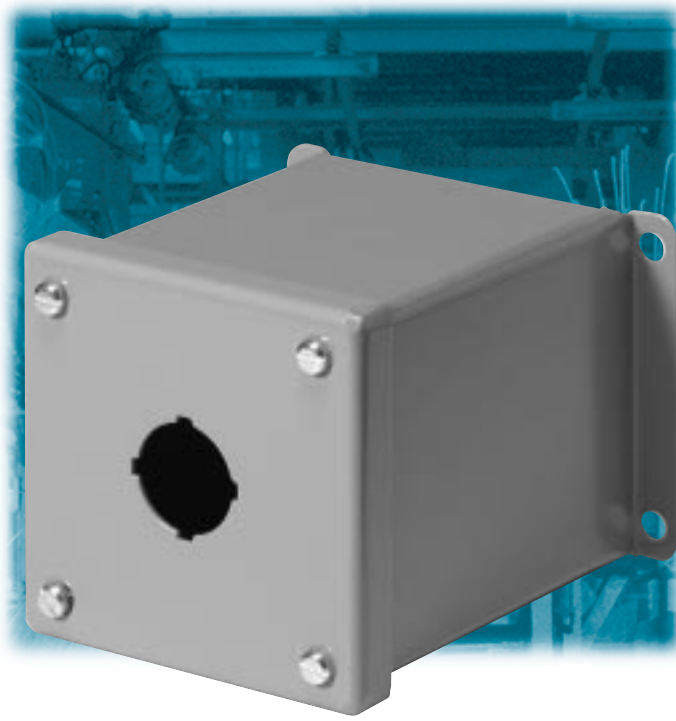
\* Add an additional 1" between pushbutton holes at center of enclosure.

Pushbutton Box				Accessories
Part No.	Outside dimensions (inches)			Oil tight hole seals
	H	W	D	
E 1PBGM	3.25	2.75	3.50	See accessories section
E 2PBGM	5.13	2.75	3.50	See accessories section
E 3PBGM	7.00	2.75	3.50	See accessories section
E 4PBGM	8.88	2.75	3.50	See accessories section
E 6PBGM*	8.50	5.00	4.25	See accessories section

\* Can be mounted to a Rittal Electromate column and base.



# Extra Deep Pushbutton Boxes



## NEMA Rated Pushbutton Enclosures

These NEMA rated boxes are designed for indoor use to house pushbuttons, selector switches, pilot lights, etc., and to protect such equipment against dirt, dust, and spraying of water, oil or coolant. Their extra depth accommodates stacked pushbutton units.

Several models of these pushbutton enclosures can be mounted onto a Rittal Electromate column and base and used as an operator station.



### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Standard pushbutton holes accept all brands of 30.5 mm "4-way" oil tight pushbuttons, switches, and pilot lights
- Captive plated screws hold cover
- External mounting brackets

### Technical Specifications

**Material:**  
 • Enclosure/cover: 14 gauge carbon steel

**Finish/color:**  
 • Enclosure/cover: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

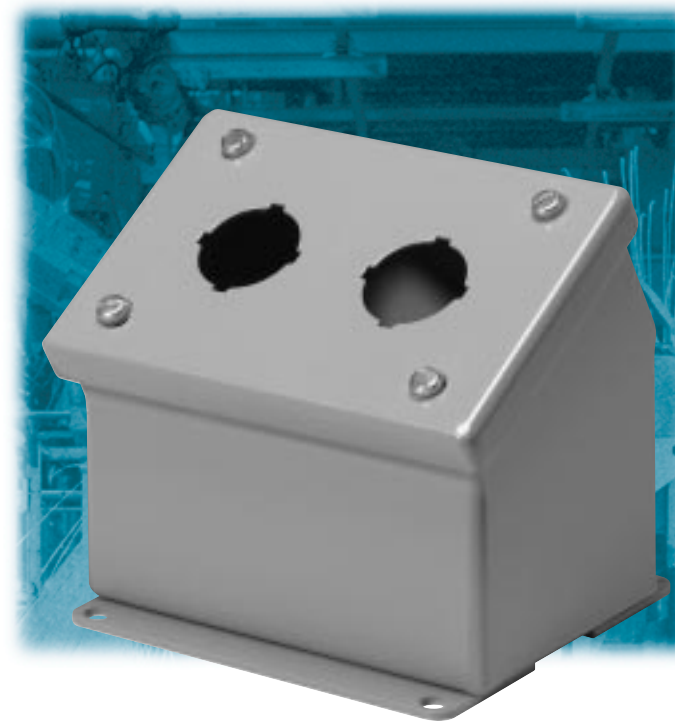
### Technical Drawings

Page .....HMI 53

Part No.	Pushbutton Box			Accessories
	Outside dimensions (inches)			
	H	W	D	Oil tight hole seals
E 1PBXD	4.00	4.00	4.75	See accessories section
E 2PBXD	6.00	4.00	4.75	See accessories section
E 3PBXD	8.00	4.00	4.75	See accessories section
E 4PBXD	10.00	4.00	4.75	See accessories section
E 6PBXD*	9.50	6.25	4.75	See accessories section

\* Can be mounted to Rittal Electromate column and base.

# Sloping Front Pushbutton Boxes



## NEMA Rated Pushbutton Enclosures

These NEMA rated boxes feature a slanted front and are designed for indoor use to house pushbuttons, selector switches, pilot lights, etc., and to protect such equipment against dirt, dust, and spraying of water, oil or coolant.

Several models of these pushbutton enclosures can be mounted onto a Rittal Electromate column and base and used as an operator station.

### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Standard pushbutton holes accept all brands of 30.5 mm "4-way" oil tight pushbuttons, switches, and pilot lights
- Captive plated screws hold cover
- External mounting brackets

### Technical Specifications

**Material:**  
 • Enclosure/cover: 14 gauge carbon steel

**Finish/color:**  
 • Enclosure/cover: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

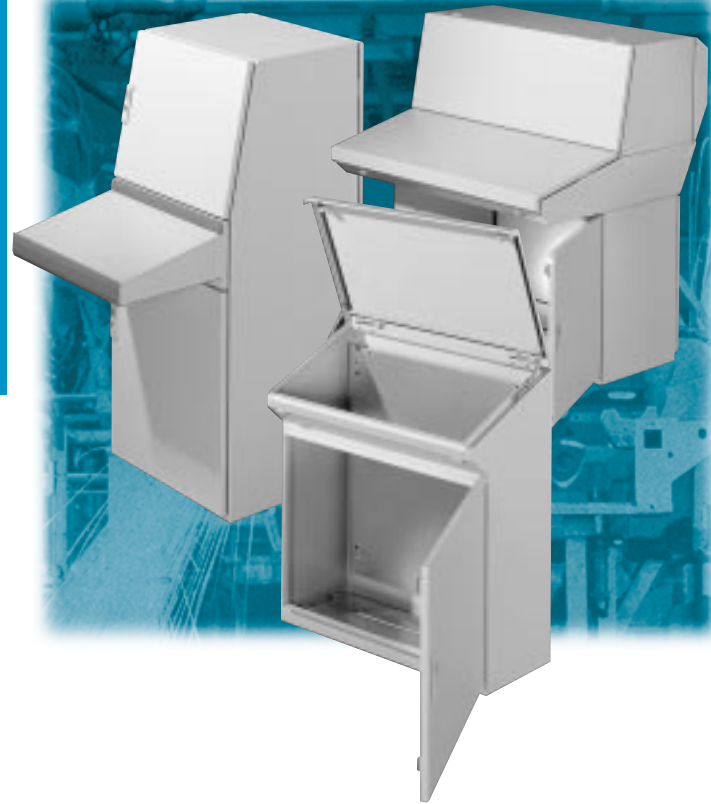
### Technical Drawings

Page .....HMI 54

Part No.	Pushbutton Box			Accessories
	Outside dimensions (inches)			
	H	W	D	Oil tight hole seals
E 1PBA	3.50	3.25	4.88	See accessories section
E 2PBA	3.50	5.50	4.88	See accessories section
E 3PBA	3.50	7.75	4.88	See accessories section
E 4PBA	3.50	10.00	4.88	See accessories section
E 4SPBA	7.25	6.25	6.75	See accessories section
E 6PBA	7.25	8.50	6.75	See accessories section
E 9PBA	9.50	8.50	7.88	See accessories section



# AP Desk Consoles



## Desk Console System

Rittal's AP Series console system answers the need for variability, performance, safety, assembly, and aesthetics for operator interface applications. The AP design allows unlimited combinations of bottom, center, and top sections. Also available are complete, one-piece desk units. Their perfect design facilitates easy assembly and provides security and usability.

## Universal Console System

The universal AP console is the newest addition to the AP family. It features a uni-body construction with an integrated 25 mm interior hole pattern for easy component installation. Available with or without an optional desk unit, it also features a full-sized mounting panel.

## Configuration

- Doors front and rear on specific models
- Safety catches and cables secure open lid
- Mounting panel included
- Depth adjustable mounting panel for AP 2610600/2640600/2650600/2694600
- 2-part and 3-part cable entry panels
- Integrated mounting rails in center section
- Knife-edge design protects against liquid entry
- Maximum strength and stability through unibody construction
- E-coat primer and powder paint provide superior corrosion resistance
- Integrated grounding provisions
- Foamed-on gasket
- Modular bottom, center, and top sections allow a variety of combinations for specific applications
- Top sections are available in two heights and depths
- System installation holes (Universal console) (25 mm spacing) PS
- Desk unit can be rotated 180° for either sloped or horizontal desk surface (Universal console)
- Full height mounting panel (Universal console)

## Technical Specifications

### Material:

- *Sheet steel housing:* 16 ga/1.5 mm
- *Doors and lids:* 14 ga/2 mm
- *Mounting panel:* 11 ga/3 mm, hot dipped galvanized zinc

### Finish/color:

- *Housing, doors, and lids:* E-coat primed, powder painted, RAL 7032 pebble grey
- *Mounting panel:* Type M
- *Universal console trim:* RAL 5018 teal green

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Pages** ..... HMI 55-59

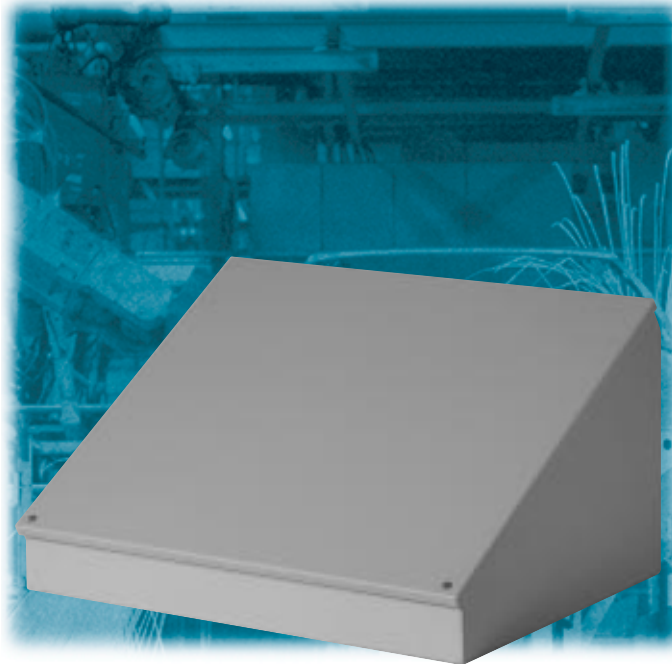
Enclosure								Mounting Panel			
Part No.	Number Of Doors	Exact outside dimensions						Dimensions			
		inches			mm			inches		mm	
		H	W	D	H	W	D	H	W	H	W
<b>Bottom Section</b>											
2600600 <sup>1</sup>	1 f	26.38	31.50	15.75	670	800	400	23.62	28.15	600	715
2620600 <sup>2</sup>	2 f	26.38	47.24	15.75	670	1200	400	23.62	43.90	600	1115
2610600 <sup>3</sup>	1 f/1 r	26.38	31.50	19.69	670	800	500	20.94	27.64	532	702
2640600 <sup>4</sup>	2 f/2 r	26.38	47.24	19.69	670	1200	500	20.94	43.39	532	1102
2650600 <sup>5</sup>	2 f/2 r	26.38	62.99	19.69	670	1600	500	20.94	59.13	532	1502
<b>Center Section</b>											
2611200 <sup>1</sup>	1	7.87	31.50	33.46	200	800	850	-	-	-	-
2641200 <sup>2</sup>	1	7.87	47.24	33.46	200	1200	850	-	-	-	-
2613200 <sup>3</sup>	1	7.87	31.50	37.40	200	800	950	-	-	-	-
2643200 <sup>4</sup>	1	7.87	47.24	37.40	200	1200	950	-	-	-	-
2653200 <sup>5</sup>	1	7.87	62.99	37.40	200	1600	950	-	-	-	-
<b>Top Section</b>											
2612600 <sup>1</sup>	1 f	16.93	31.50	15.75	430	800	400	13.78	28.15	350	715
2642600 <sup>2</sup>	1 f	16.93	47.24	15.75	430	1200	400	13.78	43.90	350	1115
2614600 <sup>3</sup>	1 f/1 r	16.93	31.50	19.69	430	800	500	13.70	28.62	348	727
2644600 <sup>4</sup>	1 f/1 r	16.93	47.24	19.69	430	1200	500	13.70	44.37	348	1127
2647600 <sup>5</sup>	1 f/1 r	24.80	31.50	23.62	630	800	600	21.57	28.62	548	727
2648600 <sup>4</sup>	1 f/1 r	24.80	47.24	23.62	630	1200	600	21.57	44.37	548	1127
2649600 <sup>5</sup>	1 f/1 r	24.80	62.99	23.62	630	1600	600	21.57	60.12	548	1527
<b>Desk Console System</b>											
2666600	1 f	37.80	23.62	15.75/18.90	960	600	400/480	30.71	20.87	780	530
2668600	1 f	37.80	31.50	15.75/18.90	960	800	400/480	30.71	28.74	780	730
2670600	1 f	37.80	39.37	15.75/18.90	960	1000	400/480	30.71	36.61	780	930
2672600	1 f	37.80	47.24	15.75/18.90	960	1200	400/480	30.71	44.49	780	1130
<b>Universal Console System</b>											
2694600	2 f/1 r	51.18	23.62	16.42/19.76	1300	600	417/502	47.05	19.57	1195	497

Note: When specifying two or three-part consoles, please use the superscript number to match bottom, center and top sections.

Accessories											
Part No.	Bases		Base castors	Console lid	Aluminum pencil ledge	Handles		Inductive mouse (COM or PS/2)	Inductive mouse pad (COM)	Inductive mouse pad (PS/2)	Mouse pad support
	4" high	8" high				Ergoform-S	Pushbutton				
	<b>Bottom Section</b>										
2600600	2901200	2902200	4570000	2615200	-	2450000	2468000	-	-	-	-
2620600	2921200	2922200	4570000	2645200	-	2450000	2468000	-	-	-	-
2610600	2841200	2842200	4570000	2616200	-	2450000	2468000	-	-	-	-
2640600	2851200	2852200	4570000	2646200	-	2450000	2468000	-	-	-	-
2650600	2863200	2864200	4570000	2656200	-	2450000	2468000	-	-	-	-
<b>Center Section</b>											
2611200	-	-	-	2615200	2678000	-	-	6445000	6444000	6444500	2380000
2641200	-	-	-	2645200	2682000	-	-	6445000	6444000	6444500	2380000
2613200	-	-	-	2616200	2678000	-	-	6445000	6444000	6444500	2380000
2643200	-	-	-	2646200	2682000	-	-	6445000	6444000	6444500	2380000
2653200	-	-	-	2656200	-	-	-	6445000	6444000	6444500	2380000
<b>Desk Console System</b>											
2666600	2911200	2912200	4570000	-	2676000	2450000	2468000	6445000	6444000	6444500	2380000
2668600	2901200	2902200	4570000	-	2678000	2450000	2468000	6445000	6444000	6444500	2380000
2670600	2891200	2892200	4570000	-	2680000	2450000	2468000	6445000	6444000	6444500	2380000
2672600	2921200	2922200	4570000	-	2682000	2450000	2468000	6445000	6444000	6444500	2380000

Accessories											
Part No.	Bases		Desk unit	Handles		Inductive mouse (COM or PS/2)	Inductive mouse pad (COM)	Inductive mouse pad (PS/2)	Mouse pad support		
	4" high	8" high		Ergoform-S	Pushbutton insert						
	<b>Universal Console System</b>										
2694600	2807200	2808200	2696200	2450000	2468000	6445000	6444000	6444500	2380000		

# Consoles, Pedestals and Bases



## Carbon Steel Desk Units

These NEMA rated individual desk units are designed for indoor use to meet the requirements of most operator interface applications.

Control components such as meters, pushbuttons, pilot lights, and switches, can be mounted on the top-hinged control panel that slants 30° or 60°.

Pedestal and base assemblies allow the desk units to be floor mounted. Wiring connections can be made through the base, the vertical column or directly to the desk unit.



### Configuration

#### Console:

- Continuously welded seams, finished smooth
- Poron strip gasket
- Control panel slants 30° or 60° and is attached with a continuous steel hinge at top and secured with captive screws

#### Pedestal/column:

- Removable, gasketed access plate in column body
- Urethane gasket

#### Base:

- Pre-punched holes to accept column
- Two formed channels welded to underside of base

### Technical Specifications

#### Material:

- Console/desk unit: 14 gauge carbon steel
- Pedestal/column: 14 gauge carbon steel with 10 gauge steel mounting flange at each end
- Base: 12 gauge carbon steel

#### Finish/color:

- All steel parts: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Pages ..... HMI 60-61

Console			
Part No.	Outside dimensions (inches)		
	H	W	D
<b>Consoles</b>			
E 8C8	8.00	8.00	7.09
E 8C12	8.00	12.00	7.09
E 8C16	8.00	16.00	7.09
E 12C12	12.00	12.00	9.09
E 12C16	12.00	16.00	9.09
E 12C20	12.00	20.00	9.09
E 16C20	16.00	20.00	11.09
E 16C24	16.00	24.00	11.09
<b>Pedestals</b>			
E 44CCOL	4.00	4.00	-
E 66CCOL	6.00	6.00	-
<b>Bases</b>			
E 18SBASE	18.00	18.00	-
E 24SBASE	24.00	24.00	-

# Series Operator Enclosures



## Carbon Steel Freestanding Consoles

These NEMA rated freestanding steel operator consoles are designed for indoor use and meet the requirements of a variety of operator interface applications.

Control instruments such as pushbuttons, pilot lights, meters, switches, etc., can be mounted on the control panel that slants 16° (Series 9), 45° (Series 12) and 60° (Series 14). Optional console top and/or writing desk provide additional flexibility. Control equipment components can be mounted on removable sub-panels on the side and back walls inside the enclosure.

### Configuration

- Continuously welded seams, finished smooth
- Urethane gasket
- Control panel slants (Series 9 slants 16°, Series 12 slants 45°, Series 14 slants 60°) and is attached with a continuous steel hinge at front and secured with captive screws
- Mechanical brace to hold control panel open to 90°
- 3-point latch with oil tight key locking handle
- Mounting panel provisions installed
- Print pocket included

### Technical Specifications

#### Material:

- Enclosure/door: 14 gauge carbon steel

#### Finish/color:

- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces, ANSI 61 grey outside and white inside
- Optional mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Pages ..... HMI 62-64

Series 9 Console										
Part No.	Height	Width	Depth	Rear mounting panel	Rear mounting panel size		Side mounting panel	Side mounting panel size		Caster Kit
					H	W		H	W	
E C924B	48.00	24.00	18.00	E 30P20	27.00	17.00	E 30P20	27.00	17.00	E C10C
E C936B	48.00	36.00	18.00	E 30P30	27.00	27.00	E 30P20	27.00	17.00	E C10C

Series 12 Console												
Body Catalog No.	Body Height	Top Height	Width	Rear mounting panel size		Top Catalog No.	Instrument panel		Access panel		Writing Desk Catalog No.	Caster Kit Catalog No.
				H	W		H	W	H	W		
E C12B	36.00	20.00	36.00	32.00	30.00	E C12T	19.19	35.19	20.19	32.19	E C12W	E C12C

Series 14 Console																
Body Part No.	Top Part No.	Body height	Top height	Width	Half Mounting Panel Part No.	Half mounting panel size		Full Mounting Panel Part No.	Full mounting panel size		Swingout Mounting Panel Part No.	Swingout mounting panel size		Writing Desk Part No.	Relay Rack Part No.	Caster Kit Part No.
						H	W		H	W		H	W			
						E C14B	E C14T		50.00	16.00		24.00	E C14P2			
E C1436B	E C1436T	50.00	16.00	36.00	E C1436P2	22.00	29.00	E C1436P3	42.50	29.00	E C1436P1	22.00	30.13	E C1436W	E C14R	E C12C



# PC Computer Enclosures



## TS8 PC Enclosures

NEW! Check out the latest in enclosure technology with Rittal's latest TS-based PC enclosure. Based on the revolutionary TS8 16-fold frame, these PC enclosures feature two levels of installation in the vertical profile for increased space and internal mounting for component shelves and more.

## Standard PC Freestanding Enclosures

PCs are important interfaces in today's computer-aided manufacturing environment. The Rittal PC computer enclosure houses monitor, CPU, keyboard, printer, and/or other components in one cabinet that is equally at home on the shop floor as in an office environment.

## Standard PC ValuePack Enclosures

Designed to offer a pre-packaged PC solution, the Rittal PC ValuePack offers an enclosure that is based on standard components that can be ordered with just a single number.

## PC Desktop/Pedestal Enclosures

The PC Desktop/Pedestal enclosure is a one piece unit designed to sit on a desk, table top or a pedestal.

## Configuration

### TS8 PC Enclosures

- All standard TS8 enclosure features
- Viewing door w/security glass
- Integrated pull-out keyboard w/mouse pad that can be pulled out left/right
- Vented monitor and component shelves prevent heat build-up

### Standard PC Freestanding Enclosures

- Knife-edge design averts liquid away from gasket
- Easy access to interior components from all sides
- Integrated grounding provisions on all surfaces
- Time saving quick assembly method through the use of the .98"/25 mm hole pattern
- Foamed-on gasket
- Rear door
- Accepts up to 19" monitors (21" on select models)
- E-coat primer and powder paint provide superior corrosion resistance

## PC ValuePack Enclosures

- Pre-installed climate control
- Pullout keyboard/integrated mouse pad
- Additional vented shelf
- Casters with brakes
- Powerstrip

## Technical Specifications

### TS8/Standard/ValuePack Enclosures

#### Material:

- *Body:* 16/1.5 mm sheet steel
- *Rear door:* 14 ga/2 mm sheet steel
- *Side walls:* 16 ga/1.5 mm sheet steel
- *Bottom front door:* 14 ga/2 mm sheet steel
- *Corner trim panels:* extruded aluminum
- *Monitor panel:* 3 mm security glass with 19" or 21" mask
- *Keyboard front panel:* plastic UL 94-VO

#### Finish/color:

- *Body:* E-coat primed, powder painted, RAL 7035 pebble grey
- *Corner trim panels:* powder painted, RAL 5018 teal green

## PC Desktop/Pedestal Enclosures

#### Material:

- *Housing and rear door:* 16 ga/1.5 mm sheet steel
- *Viewing door:* aluminum with safety glass

#### Finish/color:

- *Body:* E-coat primed, powder painted, RAL 7035 pebble grey
- *Corner trim panels:* powder painted, RAL 5018 teal green

## Protection Ratings

<b>NEMA Type</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	1	4	4X	12	13

## Certifications/Approvals

<b>Listings</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	UL	CUL	CSA	TÜV

## Technical Drawings

Pages ..... HMI 65-68

TS8 PC Enclosures									
Part No.	Configuration	Keyboard storage	Availability	Exact outside dimensions					
				inches			mm		
				H	W	D	H	W	D
8366000	Safety glass	Drawer	July 2001	63	24	25	1600	600	636
8366100	Safety glass	Fold-down	August 2001	63	24	25	1600	600	636
8368000	Safety glass	Drawer	September 2001	63	24	33	1600	600	836
8368100	Safety glass	Fold-down	September 2001	63	24	33	1600	600	836

Standard PC Freestanding Enclosures									
Part No.	Configuration	Keyboard storage	Exact outside dimensions						
			inches			mm			
			H	W	D	H	W	D	
4603603	Solid front panel	Drawer	63	24	26	1600	600	650	
4603604	Solid front panel	Console	63	24	26	1600	600	650	
4603703	Safety glass	Drawer	63	24	26	1600	600	650	
4603704	Safety glass	Console	63	24	26	1600	600	650	
4603820	Solid front panel	Fold-down	63	24	26	1600	600	650	
4603913	Safety glass	Drawer/Panel	63	24	26	1600	600	650	
4603920	Safety glass	Fold-down	63	24	26	1600	600	650	
4609703	Safety glass	Drawer	63	24	34	1660	600	850	
4609920	Safety glass	Fold-down	63	24	34	1600	600	850	
<b>21" PC Enclosure</b>									
4820210	Safety glass	Drawer	63	32	32	1600	800	800	

PC ValuePack Enclosures									
Part No.	Base PC enclosure	Climate Control method	Reference part number	Exact outside dimensions					
				inches			mm		
				H	W	D	H	W	D
9968185	4603703	2400 BTU Air Conditioner	3262100	63	24	26	1600	600	650
9968186	4609703	2400 BTU Air Conditioner	3262100	63	24	34	1600	600	850
9968187	4603703	115 cfm Filter Fan w/Outlet	3325117/207	63	24	26	1600	600	650
9968188	4609703	115 cfm Filter Fan w/Outlet	3325117/207	63	24	34	1600	600	850

PC Desktop/Pedestal Enclosures									
Part No.	Configuration	Keyboard storage	Exact outside dimensions						
			inches			mm			
			H	W	D	H	W	D	
4617703	Safety glass	Drawer	30	24	26	750	600	650	
4617704	Safety glass	Console	30	24	26	750	600	650	
4617913	Safety glass	Drawer/Panel	30	24	26	750	600	650	
4617920	Safety glass	Fold-down	30	24	26	750	600	650	

TS8 PC Enclosure Accessories												
Part No.	TS/PC Base* *Available 11/2001	4" high base		8" high base		Tower PC Carriage			Vented shelf* *Available 9/2001	Inductive mouse (COM or PS/2)	Inductive mouse pad (COM)	Inductive mouse pad (PS/2)
		W	D	W	D	Carriage	Installation kit	Extra shelf				
8366000	8800920	8601600	8601060	8602600	8602060	4641000	8612060	4642000	8800900	6444500	6444000	6445000
8366100	8800920	8601600	8601060	8602600	8602060	4641000	8612060	4642000	8800900	6444500	6444000	6445000
8368000	8800930	8601600	8601080	8602600	8602080	4641000	8612080	4642000	8800910	6444500	6444000	6445000
8368100	8800930	8601600	8601080	8602600	8602080	4641000	8612080	4642000	8800910	6444500	-	6445000

Standard PC Freestanding Enclosure Accessories														
Part No.	Bases		Reinforced castors	Mouse pad	Shelf	Tower PC Carriage			Inductive mouse (COM or PS/2)	Inductive mouse pad (COM)	Inductive mouse pad (PS/2)	Mouse pad support	Mouse holder	
	4" high	Mobile				Carriage	Installation Kit							Extra shelf
							W	D						
4603603	2813200	4640600	4634000	4614000	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
4603604	2813200	4640600	4634000	-	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
4603703	2813200	4640600	4634000	4614000	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
4603704	2813200	4640600	4634000	-	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
4603820	2813200	4640600	4634000	4613000	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
4603913	2813200	4640600	4634000	4614000	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
4603920	2813200	4640600	4634000	4613000	4629660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
4609703	2846200	4640800	4634000	4614000	4619680	4641000	4377/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
4609920	2846200	4640800	4634000	4613000	4629680	4641000	4377/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
<b>21" PC Enclosure</b>														
4820210	2848200	2986200	4634000	included	-	4641000	7127035	4642000	6444500	6444000	6445000	2380000	2382000	

PC ValuePack Enclosure Accessories														
Part No.	Bases		Reinforced castors	Mouse pad	Shelf	Tower PC Carriage			Inductive mouse (COM or PS/2)	Inductive mouse pad (COM)	Inductive mouse pad (PS/2)	Mouse pad support	Mouse holder	
	4" high	Mobile				Carriage	Installation Kit							Extra shelf
							W	D						
9968185	2813200	4640600	4634000	4614000	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
9968186	2846200	4640800	4634000	4614000	4619680	4641000	4377/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
9968187	2813200	4640600	4634000	4614000	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	
9968188	2846200	4640800	4634000	4614000	4619680	4641000	4377/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000	

PC Desktop/Pedestal Enclosure Accessories														
Part No.	Pedestals		Pedestal accessories		Mouse pad	Shelf	Inductive mouse (COM or PS/2)	Inductive mouse pad (COM)	Inductive mouse pad (PS/2)	Mouse pad support	Mouse holder			
	Without cable conduit	With cable conduit	Mounting bracket	Casters										
4617703	6141000	6141100	6147000	6148000	4614000	4619660	6445000	6444000	6444500	2380000	2382000			
4617704	6141000	6141100	6147000	6148000	-	4619660	6445000	6444000	6444500	2380000	2382000			
4617913	6141000	6141100	6147000	6148000	4614000	4619660	6445000	6444000	6444500	2380000	2382000			
4617920	6141000	6141100	6147000	6148000	4613000	4629660	6445000	6444000	6444500	2380000	2382000			

# VIP Flat Panel Enclosures



## Flat Panel Enclosure System

Rittal's VIP 6000 operator interface system offers modular solutions for countless flat panel applications. The VIP is made-to-order in a variety of sizes and versions that can be adapted to your specific requirements.

Its contemporary design showcases control technology in an attractive package, as well as provides optimum ergonomics for the operator while keeping heat-sensitive electronic components cool.

The modular flat panel system is available with a keyboard housing or tray. The keyboard housing lets you integrate your own control panel and the keyboard tray accommodates most standard PC keyboards.

This efficient operator interface system also offers a wide variety of accessories including vertical and/or horizontal handle sets, clip boards, and may be combined with support arm systems CP-L, CP-XL, or CP-Vertical.

## New Frame Bezel Designs

Two new frame bezel designs have been added to the current VIP wide frame bezel that will allow further customization of the VIP enclosures. The new narrow frame bezel enhances the aesthetics of the VIP and reduces the overall size of the VIP by almost 2". The new "combined" frame bezel has the same features of the narrow bezel plus integrated rubberized grips on the sides.



**.009 Wide VIP 6000 Frame**  
Wide front frame of extruded aluminum sections and die-cast zinc corner pieces.

**.209 Narrow VIP 6000 Frame**  
Narrow front frame of extruded aluminum sections and die-cast zinc corner pieces.

**.109 Combined VIP 6000 Frame**  
Combination of narrow front frame top and bottom (made from extruded aluminum sections and die-cast zinc corner pieces), plus soft frame at the sides.

## Configuration

- Three frame designs allow further customization
- Designed to be used with CP-L, CP-XL, or CP-Vertical pendant arm systems
- Mounting channels on all sides facilitate component installation
- The interior of the housing is accessible through either a hinged rear door or a screwed-on aluminum rear panel
- A mounting kit can be clipped-in to accommodate installation of a variety of control panel components and displays
- Colored plastic strips cover mounting screws and enhance the design of your product
- Cable duct for easy routing from enclosures to keyboard housing
- Enclosures can be ordered with, without, or a combination of cooling fins
- The enclosure front can be partitioned with optional cross mullion
- Optional accessories such as handles, clipboards, and front panels are available

## Technical Specifications

### Material:

- *Housing and front frame:* extruded aluminum
- *Frame corner pieces:* zinc die-cast
- *Corner protection pieces for housing:* self-extinguishing plastic
- *Trim strips:* flexible plastic

### Finish:

- *Housing frame:* natural anodized
- *Front frame and frame corner pieces:* textured enamel; RAL 7035 light grey
- *Trim strips:* RAL 5018 teal, RAL 5012 blue, RAL 4006 purple, RAL 7030 grey, RAL 3001 red, RAL 7024 graphite grey
- *Wide frame:* RAL 7035 light grey
- *Narrow frame:* RAL 7035 light grey
- *Combined frame:* RAL 7035 light grey with soft rubber coating (RAL 7024)

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Pages** ..... HMI 69-74

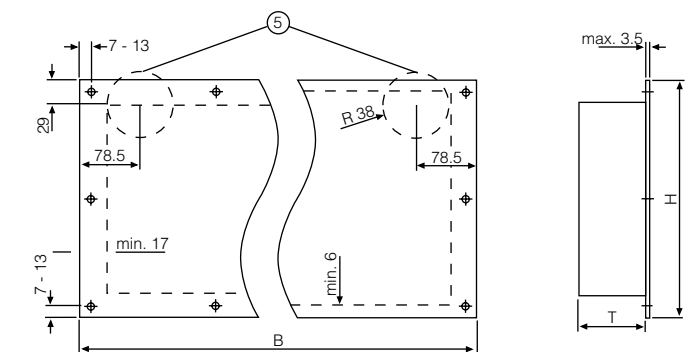
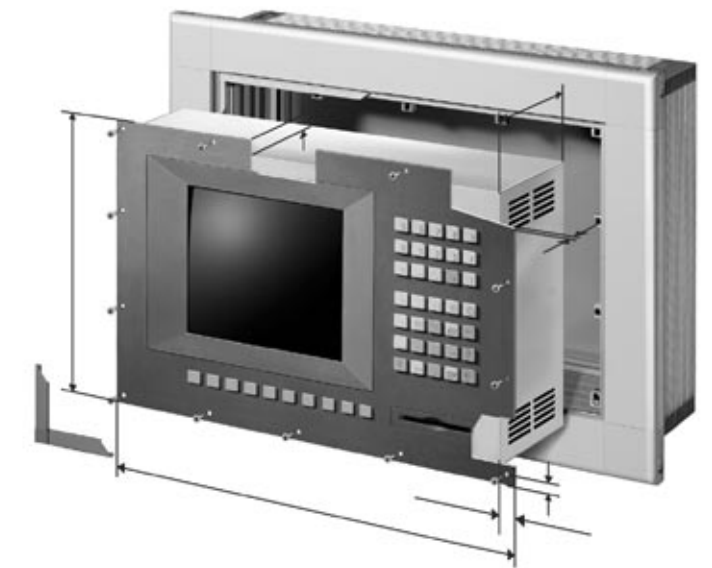
## Determine The Panel Dimensions

It's so easy.

First determine the height and width of your planned operator panel and check the following installation criteria. If these criteria are met, you are ready to install directly in one of three VIP frames, customized to your dimensions. The dimensions of the selected operating housing (3.), the keyboard housing (4.) and the handle sets etc. are automatically tailored to match the frame. In exceptional cases to which other conditions apply, Rittal also has the answer.

1. 7 to 13 mm spacing of the fixing holes or bolts.
2. Front plate projection at sides with fixing holes at least 17 mm, and at sides without fixing holes at least 6 mm.
3. Front plate thickness variable, depending on the type of trim section.
4. **Installation depths:**  
Command panels = 155 mm, 185 mm, 295 mm, 328 mm, 438 mm.  
Command panels with **45 mm deep rear panel\*** = 200 mm, 230 mm, 340 mm, 373 mm, 483 mm.  
Command panels **with 245 mm deep rear panel\*** = 400 mm, 430 mm, 540 mm, 573 mm, 683 mm.
5. For versions with a hinged rear panel, the maximum installation depth is reduced by 27 mm in the vicinity of the lock.

\* Other depths available on special request.



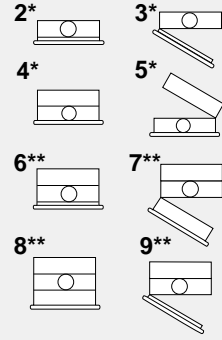


# VIP 6000 Operator Enclosure Design

## 3.1 Operator Enclosure

### Installation depth:

- 1 6.10"/155 mm
- 2 7.28"/185 mm – screw-on
- 3 7.28"/185 mm – hinged
- 4 11.61"/295 mm – screw-on
- 5 11.61"/295 mm – hinged
- 6 12.91"/328 mm – screw-on
- 7 12.91"/328 mm – hinged
- 8 17.24"/438 mm – screw-on
- 9 17.24"/438 mm – hinged



### Example

The colored numbers identify the version we've selected for our example.

\*Use CP-L support arm system  
\*\*Use CP-XL support arm system

View from the top.  
Other hinges available, if required.



## 3.2 Cross Member/Sealing Bar

- 0 Without cross member or sealing bar
- 1 With one cross member
- 2 With one sealing bar
- 3 With two cross members
- 4 With two sealing bars
- 5 With one cross member and one sealing bar
- 6 With an adaptor plate\*
- 7 With spacer and installation blanking plate above\*<sup>3)</sup>
- 8 With spacer and installation blanking plate below\*<sup>3)</sup>



\* Special request only—extended lead times.  
<sup>3)</sup> Only in connection with end trim

## 3.3 Cooling Fins

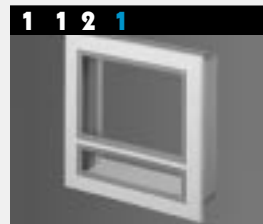
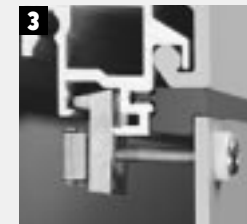
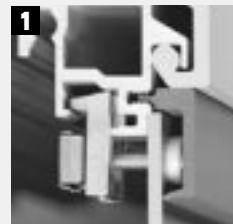
- 1 No fins
- 2 Fins on sides only
- 3 Fins all around
- 4 For aggressive cooling requirements.



For units with installation depths of 7.28" and 12.91"/185 and 328 mm, the housing part that is attached to the front frame (approximately 35 mm) is available without fins only.

## 3.4 Types Of Trim Strips

- 1 Cover trim
- 2 End trim
- 3 Spacer trim



## 3.5 Trim Colors

- 1 Teal (similar to RAL 5018)
- 2 Light blue (similar to RAL 5012)
- 3 Bright red (similar to RAL 3001)
- 4 Purple (similar to RAL 4006)
- 5 Dark grey (similar to RAL 7030)
- 6 Graphite grey (similar to RAL 7024)

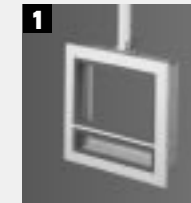
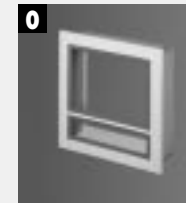


## 3.6 Support Arm Connection

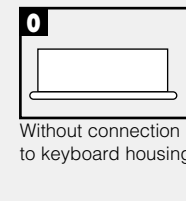
- 0 Without connection
- 1 Connection at top
- 2 Connection at bottom
- 3 Connection at top and at bottom (includes one cover panel)

Two different support arm systems are available:

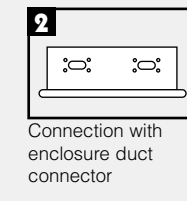
- CP 6500 is designed for enclosures with installation depths of 6.10", 7.28", and 11.61"/155, 185, and 295 mm.
- CP 6000 is designed for enclosures with installation depths 12.91" and 17.24"/328 and 438 mm.



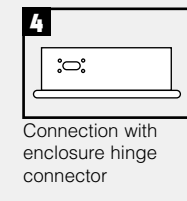
## 3.7 Cable Duct Connection



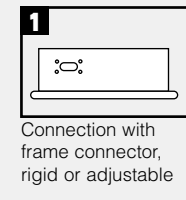
Without connection to keyboard housing



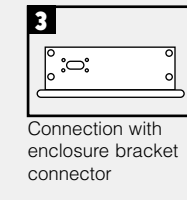
Connection with enclosure duct connector



Connection with enclosure hinge connector



Connection with frame connector, rigid or adjustable



Connection with enclosure bracket connector

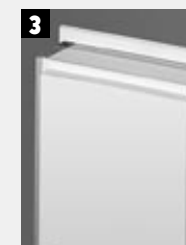
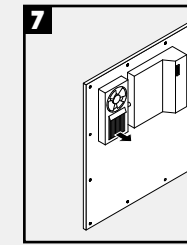
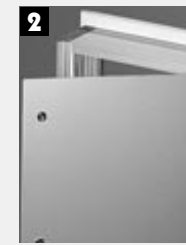
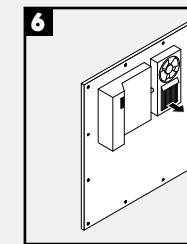


## 3.8 Rear Wall

- 1 Screw-on.\*\*
- 2 Hinged, on longest side, lock with double bit insert.\*\*
- 3 Expansion back plus 1.77"/45 mm\* sheet steel, light grey (RAL 7035), hinged, integral screw lock.
- 4 Expansion back plus 9.64"/245 mm\* aluminum, light grey (RAL 7035), screw-on.
- 5 Heavy-duty hinge for heavy installed equipment.\*\*
- 6 Screw-fixed with built-in small VIP air conditioners. Recommended for Command Panel versions 3, 5, 7, 9. Condenser assembly, top left\*\*
- 7 Screw-fixed with built-in small VIP air conditioners. Recommended for Command Panel versions 3, 5, 7, 9. Condenser assembly, top right\*\*

\* Other depths and designs on request.

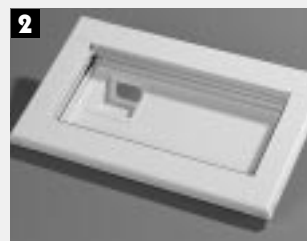
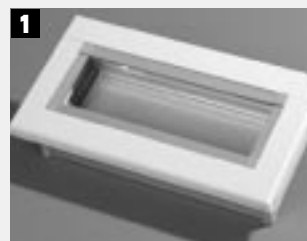
\*\* Aluminium, natural anodized



# VIP 6000 Keyboard Housing Design

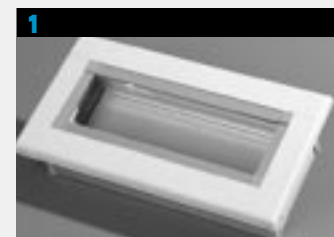
## 4.1 Keyboard Enclosure

- 1 Installation depth: 4.13"/105 mm
  - 2 Installation depth: 1.73"/44 mm
  - 3 Keyboard lay-in tray, depth: 1.06"/27 mm
  - 4 Keyboard lay-in tray, depth 1.06"/27 mm, with flexible cable tube connector
- For standard keyboards. Without trim. All keyboard housings are custom made per your component dimensions and depending on your operator enclosure specifications.



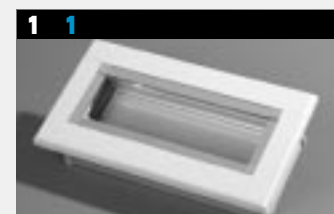
## Example

The colored numbers identify the version we've selected for our example.



## 4.2 Types Of Trim Strips\*

- 1 **Cover trim**  
covers installation screws of front panel – for front panels ≤ .14"/3.5 mm thick.
- 2 **End trim**  
covers gap between front panel and frame profile – for all front panel thicknesses.
- 3 **Spacer trim**  
For components that must be flush with frame profile.  
For front panels with a thickness of appr. 0.14"/3.5 mm.



\*No selection is available for keyboard enclosure 3 and 4. Please indicate with an X in this case.

## 4.3 Trim Colors\*

- 1 Teal (similar to RAL 5018)
  - 2 Light blue (similar to RAL 5012)
  - 3 Red (similar to RAL 3001)
  - 4 Purple (similar to RAL 4006)
  - 5 Dark grey (similar to RAL 7030)
  - 6 Graphite grey (similar to RAL 7024)
- Enclosure corner protection pieces will also be supplied in the specified color. Other colors are available on special request.

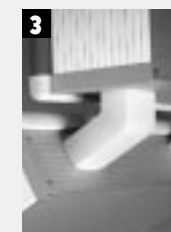
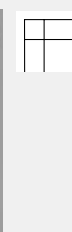


\*No selection is available for keyboard enclosure 3 and 4. Please indicate with an X in this case.



## 4.4 Frame Connector

- 1 Rigid, 120° angle
- 2 Adjustable from 75° to 210°, adjustable in 7.5° increments. Allows optimum ergonomic adjustment for each user.
- 3 Enclosure duct connector
- 4 Enclosure bracket connector
- 5 Frame hinge connector



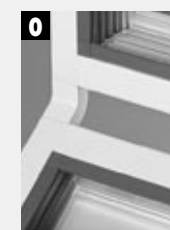
## Example

The colored numbers identify the version we've selected for our example.

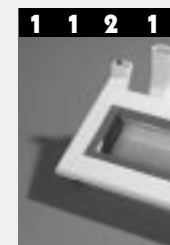


## 4.5 Cable Duct\*

- 0 None
- 1 Rigid, light grey (RAL 7035) aluminum – for use with rigid frame coupling between operator enclosure and keyboard housing. Installation depth: 4.13"/105 mm
- 2 Flexible, light grey (RAL 7035) plastic – for use with rigid and flexible frame coupling between operator enclosure and keyboard housing. Installation depth: 4.13"/105 mm, 1.73"/44 mm or 1.06"/27 mm



\*No selection is available for keyboard enclosure 3. Please indicate with an X in this case.



**Part No.: 6392.009**  
**Specification Numbers**  
**For Operator Enclosure**

1 1 2 1 2 2 1 2

**Part No.: 6351.009**  
**Specification Numbers**  
**For Keyboard Housing**

1 1 2 1 1

You can easily specify your complete VIP 6000 operator interface system just as we have demonstrated in our example.

- Detailed dimensions for the components selected can be found on pages 69-74.



# VIP 6000 Ordering Guide...

## VIP 6000 Operator Housing

### 1. Select the frame

The frame type is determined from the Part No.

Wide frame      Narrow frame      Combination frame

Part No. CP  
**6 3 9 2 . 0 9**

### 2. Enter the panel dimensions

Please state the number of front plates/panels used, their height (H) x width (W), and/or the manufacturer/model.

	Panel H x W		
	Supply panel <input type="checkbox"/> Yes <input type="checkbox"/> No	Cutouts <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Panel H x W		
	Supply panel <input type="checkbox"/> Yes <input type="checkbox"/> No	Cutouts <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Panel H x W		
	Supply panel <input type="checkbox"/> Yes <input type="checkbox"/> No	Cutouts <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Manufacturer/model		

### 4. Operator housing handles

Please select Part No. and location.

#### 4.1 For operator housing CP 6392.009\*

- Horizontal handle (one handle) Part No. 6101.009  
 Top       Bottom       Both  
 Vertical handle (1 set) Part No. 6102.009  
 Default is left and right

#### 4.2 For operator housing CP 6392.109/6392.209\*

- Corner handle (1 set) Part No. 6107.000  
 Top       Bottom       Both  
 Straight 7U (12<sup>1/4</sup>") handle (1 set) Part No. 6107.100  
 Horizontal       Vertical       Both  
 Straight 19" handle (1 set) Part No. 6107.200  
 Horizontal       Vertical       Both

\* Handle cannot be located on bottom of operator housing if keyboard is used.  
 Note: When using a VIP enclosure (Part No. CP 6392.009/6351.009) in conjunction with a CP-Vertical pendant arm system, you must order a CP 6392.009 horizontal handle.  
 For VIP enclosures (Part No. CP 6392.109/209 and CP 6531.109/209) a specific CP-Vertical release handle must be ordered.

### 3. Determine the design of the operator housing

(see pages 69-70)

#### 3.1 Installation depths

Installation depth 6.10"/155 mm	1
Installation depth 7.28"/185 mm	2
Installation depth 7.28"/185 mm, hinged	3
Installation depth 11.61"/295 mm	4
Installation depth 11.61"/295 mm, hinged	5
Installation depth 12.91"/328 mm	6
Installation depth 12.91"/328 mm hinged	7
Installation depth 17.24"/438 mm	8
Installation depth 17.24"/438 mm, hinged	9

#### 3.2 Cross member/sealing bar

Without	0
1 cross mullion	1
1 sealing bar	2
2 cross mullions	3
2 sealing bars	4
1 cross mullion and 1 sealing bar	5
1 adaptor panel	6
1 spacer and 1 trim panel (top)	7
1 spacer and 1 trim panel (bottom)	8

#### 3.3 Cooling fins

No fins	1
Fins at sides	2
Fins all round	3

#### 3.4 Types of trim

Cover trim	1
End trim	2
Spacer trim	3

#### 3.5 Trim colors

Turquoise (similar to RAL 5018)	1
Light blue (similar to RAL 5012)	2
Bright red (similar to RAL 3001)	3
Purple (similar to RAL 4006)	4
Stone (similar to RAL 7030)	5
Graphite grey (similar to RAL 7024)	6

#### 3.6 Support arm connection

Without	0
Connection at top	1
Connection at bottom	2
Connection top and bottom (including a cover plate)	3

#### 3.7 Connection to the keyboard housing

Without	0
For frame connectors	1
For enclosure duct connectors	2
For enclosure bracket connectors	3
For frame hinge connectors	4

#### 3.8. Rear panel

Screw mount	1
Hinged	2
Hinged, with extra installation depth 1.77"/45 mm	3
Screw mount, with extra installation depth 9.65"/245 mm	4
With heavy-duty hinge	5
Small air conditioner (SK 3201.100) with condenser at the top left	6
Small air conditioner (SK 3202.100) with condenser at the top right	7

Please enter your design code numbers here

--	--	--	--	--	--	--	--	--	--

# It's Easy By Fax...

## VIP 6000 Keyboard Housing

### 1. Select the frame

The frame type is determined by the Part No.

Wide frame      Narrow frame      Combination frame

Part No. CP  
**6 3 5 1 . 0 9**

### 2. Enter the panel dimensions

Please state the number of front plates/panels used, their height (H) x width (W), and/or the manufacturer/model.

	Panel H x W		
	Supply panel <input type="checkbox"/> Yes <input type="checkbox"/> No	Cutouts <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Manufacturer/model		

### 4. Keyboard housing handles

Please select Part No. and location.

#### 4.1 For keyboard housing CP 6351.009\*

- Horizontal handle (one handle) Part No. 6101.009  
 Bottom  
 Vertical handle (1 set) Part No. 6102.009  
 Default is left and right

#### 4.2 For keyboard housing CP 6351.109/6351.209\*

- Corner handle (1 set) Part No. 6107.000  
 Bottom  
 Straight 7U (12<sup>1/4</sup>") handle (1 set) Part No. 6107.100  
 Horizontal  
 Straight 19" handle (1 set) Part No. 6107.200  
 Horizontal

\* Handle cannot be located on bottom of operator housing if keyboard is used.  
 Note: When using a VIP enclosure (Part No. CP 6392.009/6351.009) in conjunction with a CP-Vertical pendant arm system, you must order a CP 6392.009 horizontal handle.  
 For VIP enclosures (Part No. CP 6392.109/209 and CP 6531.109/209) a specific CP-Vertical release handle must be ordered.

### 3. Determine the design of the keyboard housing

(see pages 71-72)

#### 3.1 Installation depths

Installation depth 4.14"/105 mm	1
Installation depth 1.73"/44 mm	2
Depth 1"/27 mm with cable grommet	3
Depth 1"/27 mm for flexible cable duct	4

#### 3.2 Type of trim

Cover trim	1
End trim	2
Spacer trim	3

#### 3.3 Trim colors

Turquoise (similar to RAL 5018)	1
Light blue (similar to RAL 5012)	2
Bright red (similar to RAL 3001)	3
Purple (similar to RAL 4006)	4
Stone (similar to RAL 7030)	5
Graphite grey (similar to RAL 7024)	6

#### 3.4 Keyboard housing connector

Frame connector, rigid	1
Frame connector, adjustable	2
Housing duct connector	3
Enclosure bracket connector	4
Frame hinge connector	5

#### 3.5 Cable ducts

Without	0
Rigid	1
Flexible	2

Please enter the Part No. of your keyboard housing here.

--	--	--	--	--	--	--	--	--	--

Modifications as per attached.

### From:

Company \_\_\_\_\_

Address \_\_\_\_\_

City/State/ZIP \_\_\_\_\_

Telephone/Fax \_\_\_\_\_

Contact Person \_\_\_\_\_

Position/Department \_\_\_\_\_

Date/Signature \_\_\_\_\_



# Optipanel HMI Enclosures



## Smart HMI Solutions

Based on the design and construction of the popular Command Panel operator enclosure line, Rittal's new Optipanel is an ideal housing for applications where smaller enclosures need a special design. The Rittal Optipanel features an elegant, flat design for the utmost in HMI housings. The Optipanel operator housing can be customized exactly to the dimensions of your operator panel as well as other components.

**Note:** See panel installation criteria on page HMI 12.

### Configuration

- Standard version in 3.9" installation depth for commonly used front panels (sized at 19" x 7U)
- Customized models also available for additional installation depths
- Configure to your specific application with housing, mullion, rear wall and keyboard housing
- Retaining clamps provide flexibility to install variety of standard operator interface display panels
- NEMA 12/IP 65 housing with a wide range of accessory options

### Technical Specifications

#### Material:

- *Housing and front frame:* extruded aluminum
- *Frame corner pieces:* die-cast zinc
- *Corner protection pieces:* plastic, self extinguishing
- *Gasket trim strips:* extruded flexible plastic

#### Finish/color:

- *Housing frame:* natural anodized
- *Corner pieces:* powder coated RAL 7035 light grey, textured
- *Plastic parts:* RAL 7024 graphite grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Pages** ..... HMI 75-76

Part No.	NEMA rating	Enclosure						Mounting Area					
		Exact outside dimensions						Usable mounting area					
		inches			mm			inches			mm		
H	W	D	H	W	D	H	W	H	W	H	W	D	D
6380000	1, 12	13.94	20.75	4.33	354	527	110	12.22	19.00	310.3	482.6	3.94	100

Accessories					
Part No.	Pendant arms and couplings	Aluminum front panel	Fixing hardware (panel)	Fixing hardware for O/I displays	Signal pillars
6380000	See accessories section	6028000	6050000	6058500	See accessories section

\*Pending.

# Optipanel Ordering Guide

## Optipanel operator housing/keyboard housing CP 6382.009

The Optipanel configuration is built according to the following criteria:

### 1. Enter the panel/keyboard dimensions

	Panel H x W				
	Supply panel <input type="checkbox"/> Yes <input type="checkbox"/> No	Cutouts <input type="checkbox"/> Yes <input type="checkbox"/> No			
Manufacturer/model					
	Panel H x W				
	Supply panel <input type="checkbox"/> Yes <input type="checkbox"/> No	Cutouts <input type="checkbox"/> Yes <input type="checkbox"/> No			
Manufacturer/model					
	Panel H x W				
	Supply panel <input type="checkbox"/> Yes <input type="checkbox"/> No	Cutouts <input type="checkbox"/> Yes <input type="checkbox"/> No			
Manufacturer/model					
	Panel H x W				
	Supply panel <input type="checkbox"/> Yes <input type="checkbox"/> No	Cutouts <input type="checkbox"/> Yes <input type="checkbox"/> No			
Manufacturer/model					

Simply copy, complete and fax to Rittal's Customer Service Team at (800) 477-4003.

### From:

Company \_\_\_\_\_

Address \_\_\_\_\_

City/State/ZIP \_\_\_\_\_

Telephone/Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Name \_\_\_\_\_

Date/Signature \_\_\_\_\_

### 2. Optipanel design codes

After selecting a design number, use the "Design Code Number" box at bottom to configure your selection.

#### 2.1 Installation depth of operator housing

Installation depth 2"/50 mm	1
Installation depth 4"/100 mm	2
Installation depth 6"/150 mm	3

#### 2.2 Cross mullion

Without	0
With (one mullion per plate/panel seam)	1

#### 2.3 Support arm connection

	For	
Without		0
Top connection	enclosure coupling CP 3525.100 or CP 6525.600	1
Bottom connection		2
Top & Bottom connection (cover plate included)		3
Top connection	enclosure coupling CP 6525.000 or CP 6525.500 90° enclosure coupling CP 6526.000	4
Bottom connection		5
Connection top & bottom (cover plate included)		6
Rear connection	enclosure coupling CP 6525.100 or CP 6525.600	7

#### 2.4 Rear Wall

Screw-on	1
Hinged	2

#### 2.5 Keyboard housing

Without	0
Center, installation depth 2"/50 mm	1
Center, installation depth 4"/100 mm	2

Please enter your Design Code Number:

### 3. Operator Housing Handles

#### 3.1 For keyboard housings CP 6351.109/6351.209\*

- Corner handle (1 set) Part No. 6107.000
  - Bottom
- Straight 7U (12 1/4") handle (1 set) Part No. 6107.100
  - Horizontal
- Straight 19" handle (1 set) Part No. 6107.200
  - Horizontal

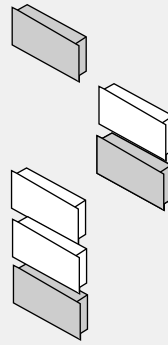
\* Handle cannot be located on bottom of operator housing if keyboard is used.



# Optipanel Enclosure Design

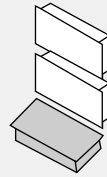
## 1.1 For Operator Housing CP 6382.009

Indicate the height (H), width (W) and depth (D) or the manufacturer/ type of the HMI device used. Please check for the installation criteria on the first page for further information.



## 1.2 For Keyboard Housing

Indicate the height (H), width (W) and depth (D) of keyboard/panels or the manufacturer/ type of the keyboard used. Check the installation criteria on the first page for further information.



## For Technical Questions/Order Placement:

Please copy the form on page HMI 20 and enter your **panel dimensions** and the **code** for your special configuration.

### Configuration Example

The following is an example of an Optipanel configuration with the respective **code number** highlighted.

## 2.1 Operator housing



1 Installation depth 2"/50 mm



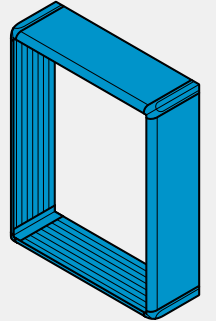
2 Installation depth 4"/100 mm



3 Installation depth 6"/150 mm

2

**Configuration example:**  
The following is an example of an Optipanel configuration with the respective code number highlighted.



## 2.2 Front design



0 Without mullion



1 With mullion\*



2 With sealing bar\*



3 With spacer and installation panel on top\*\*

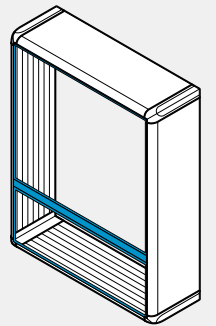


4 With spacer and installation panel at the bottom\*\*

\* Indicate the number of individual sections.  
Example: 3 front panels in the operator housing = 2 panel joining points = 2 mullions/sealing bars in the configuration.  
Other configurations on request.

\*\*Special request only. Extended lead times.

2 1



## 2.3. Support arm and floor stand connection



0 Without connection



1 Top connection



2 Bottom connection



3 Connection top and bottom\*



4 Top connection



5 Bottom connection



6 Connection top and bottom\*

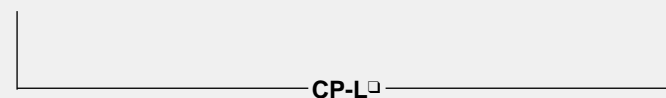


7 Rear connection, at the bottom\*\*

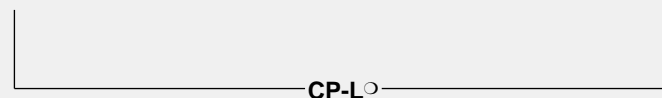


7 Rear connection, on top\*\*  
for CP 6525.1X0,  
CP 6525.6X0

\*Includes a cover plate to close unused cutouts.



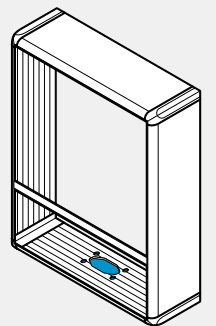
for enclosure coupling CP 6525.1X0,  
enclosure mount CP 6525.6X0  
**Valid only for installation depth (D)  
of 4 and 6"/100 and 150 mm**



for enclosure coupling CP 6525.0X0,  
enclosure mount CP 6525.5X0,  
angle coupling CP 6525.0X0  
**Valid only for installation depth (D) of 6"/150 mm**

\*\*Coupling is supplied in RAL 7030.

2 1 2



**2.4. Rear wall**

Aluminum, 0.12"/3 mm, natural anodized.

**Note:**

- 1) For support arm connection on rear side it is only possible to hinge on the opposite side of the support arm connection.
- 2) Cannot be used with installation depth of 2"/50 mm with keyboard housing.
- 3) Standard double bit lock insert is exchangeable for lock inserts 41 mm, version C, plastic thumbturn handle and T-handles, version C.
- 4) In the rear wall hinged model, the maximum installation depth is reduced by 1"/25 mm around lock.



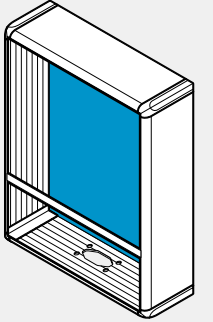
Rear wall screwed-on



Rear wall is hinged on the longest side. Viewed from the rear, right or bottom hinged 1) 2) 3) 4).

**2 1 2 1**

**Configuration example:**  
The following is an example of an Optipanel configuration with the respective code number highlighted.



**2.5. Keyboard housing**

Width is independent from operator housing. The swivel angle is continuously adjustable from 80° to 155°.



Without keyboard housing

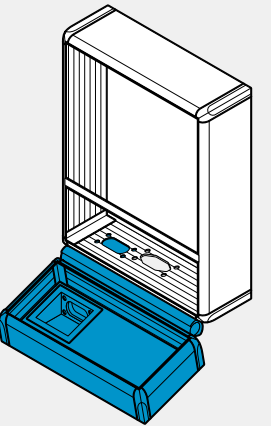


With keyboard housing of installation depth 2"/50 mm.



With keyboard housing of installation depth 4"/100 mm.

**2 1 2 1 1**



**Additional parts needed:**

Installation kit for mounting front plates, operator panels and keyboards into the operator or keyboard housings.

**Optipanel configuration example:**

The drawings on the right margin highlight the build-up of the Optipanel as various options are added. The photo, to the right, shows the final configuration along with the configuration code below. The configuration of the code number is shown in the following table.

2.1	<b>2</b>	Operator housing, installation depth of 4"/100 mm
2.2	<b>1</b>	With mullion
2.3	<b>2</b>	Support arm on the bottom
2.4	<b>1</b>	Screwed-on rear wall
2.5	<b>1</b>	With keyboard housing, installation depth of 2"/50 mm

You can easily define the dimensions and configuration of an operator housing in just a few steps.

**Please provide the following pieces of information for RFQ or order:**

- 1. Part No.: CP 6382.009
- 2. Dimensions and number of panels/front plates in the operator or keyboard housing, along with drawings for holes/cutouts.
- 3. Configuration code number

**Operator/keyboard housing**

**Part No.: CP 6382.009**

**Configuration code number: 2 1 2 1 1**



# CP Pendant Arm Enclosures



## Operator Interface Enclosures

Rittal's CP Series was developed to meet the requirements of today's sophisticated control technology including:

- Dense packaging of sensitive components
- Direct accessibility, anywhere on the plant floor
- A high degree of flexibility and ergonomic adaptation to the work place.

Numerous models of operator interface enclosures and two pendant systems combine with an extensive range of support arms, journals, hinges, and connection components to cover virtually any operator interface situation.

The high degree of flexibility and ergonomic design provide unlimited variety for today's diverse work environment.

## Configuration

- NEMA 1, 12/IP 54 or 55
- Various configurations for specific applications
- Enclosures can be used with CP-L support arm system (CP-XL can be used w/adaptor CP 6528000)
- Integrated handle grip and front panel
- Designed for small to medium sized HMI applications
- Enclosures include integrated roof reinforcement
- Aluminum front panel can be removed for easy installation of holes and cutouts

## Technical Specifications

### Material:

- Enclosure, door: 16 ga/1.5 mm sheet steel
- Front panel: 14 ga/2 mm aluminum
- Handle grips: aluminum

### Finish:

- Enclosure, door: E-coat primed, painted, RAL 7035 light grey
- Handle: painted, RAL 7030 stone grey or 5018 teal

## Protection Ratings

NEMA Type  1  4  4X  12  13

## Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

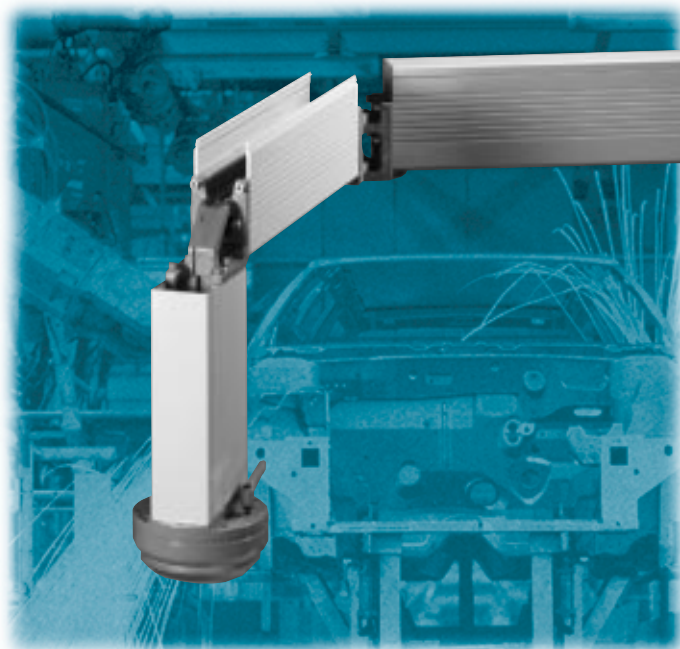
## Technical Drawings

Page .....HMI 79

Part No.	NEMA rating	Enclosure						Mounting Area					
		Exact outside dimensions						Usable mounting area				Usable depth	
		inches			mm			inches		mm		inches	mm
		H	W	D	H	W	D	H	W	H	W	D	D
<b>Control Panel Enclosures/CP 6500 (CP-L) Series</b>													
6540200	1, 12	7.9	11.8	6.1	200	300	155	5.91	9.84	150	250	5.91	150
6534000	1, 12	7.9	11.8	7.1	200	300	180	6.11	8.94	155	227	6.62	168
6535000	1, 12	11.8	11.8	7.1	300	300	180	10.05	8.94	255	227	6.62	168
6536000	1, 12	11.8	15.7	7.1	300	400	180	10.05	12.88	255	327	6.62	168
6537000	1, 12	15.7	11.8	7.1	400	300	180	13.99	8.94	355	227	6.62	168
6538000	1, 12	15.7	15.7	7.1	400	400	180	13.99	12.88	355	327	6.62	168
6531200	1, 12	11.81	14.96	9.21	300	380	234	9.84	12.99	250	330	8.07	205
6530200	1, 12	14.96	14.96	9.21	380	380	234	12.99	12.99	330	330	8.07	205
6533200	1, 12	14.96	23.62	9.21	380	600	234	12.99	21.65	330	550	8.07	205
6532200	1, 12	19.69	19.69	9.21	500	500	234	17.72	17.72	450	450	8.07	205

Part No.	Accessories		
	Pendant arms and couplings	Signal pillars	Interface box
<b>Control Panel Enclosures/CP 6500 (CP-L) Series</b>			
6540200	See accessories section	See accessories section	-
6534000	See accessories section	See accessories section	-
6535000	See accessories section	See accessories section	2482000
6536000	See accessories section	See accessories section	2482000
6537000	See accessories section	See accessories section	2482000
6538000	See accessories section	See accessories section	2482000
6531000	See accessories section	See accessories section	2482000
6530000	See accessories section	See accessories section	2482000
6533000	See accessories section	See accessories section	2482000
6532000	See accessories section	See accessories section	2482000

# CP Pendant Arm Systems



## Operator Interface And Support Arm Systems

Rittal's CP 6000 (CP-XL) Series pendant arm systems were developed to offer a high degree of flexibility and ergonomic adaptation to the work environment required by today's sophisticated control technology. A wide variety of enclosures, support arm systems, and accessories combine to satisfy virtually any operator interface need.

### Configuration

- Self-tapping screws for easy and secure installation of the pendant arm system
- Support arm cover clips on to support arm for easy access to wiring
- Cable routing before/after installation is easy because one side of the support arm is open
- The enclosed portion of the support arm provides additional shielding
- Torsion resistant extruded aluminum support arms have high load bearing capacity and attractive styling
- Extruded aluminum support arms can be easily cut to a required length
- Enclosures can swivel 350° with couplings
- 90° elbow coupling secures connection between support arm sections and also allows easy cable routing
- Enclosure coupling can be used for top or bottom installation
- Couplings come with either plastic covers or rubber boots which can be removed for easy access to wiring
- Any CP or VIP enclosure can be used

### Technical Specifications

- Finish/color:**
- Arm: RAL 7035 light grey
  - Couplings: RAL 7030 stone grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

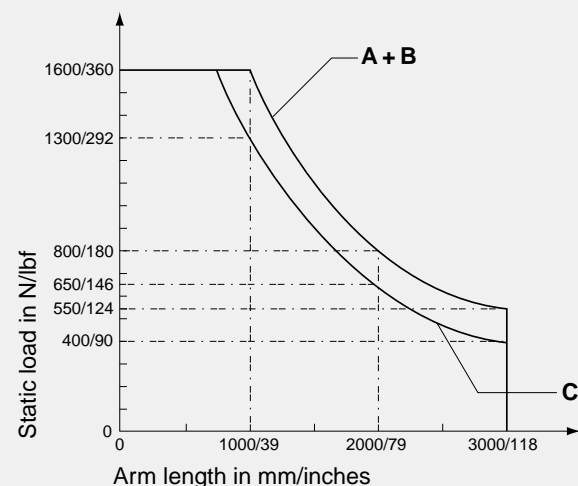
### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

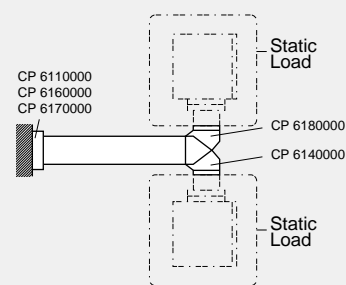
## Unlimited Variety-CP 6000 (CP-XL)

Rittal's flexible CP 6000 pendant arm system offers many advantages over conventional support arm systems. With its extensive range of support arms, journals, and couplings, it offers a sophisticated solution for virtually every application.

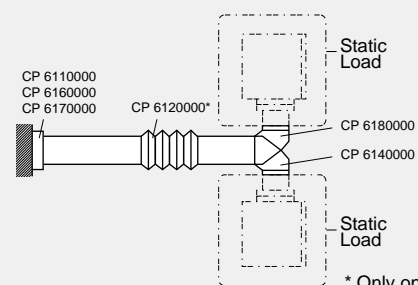
Today's operator interface control systems guarantee optimal information exchange and user-friendliness, but at the same time, place increasing demands on the interface between the operator and machine.



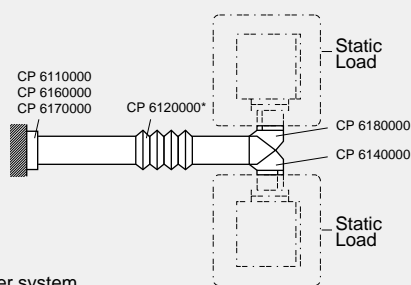
A: Open and solid support section



B: Solid support section

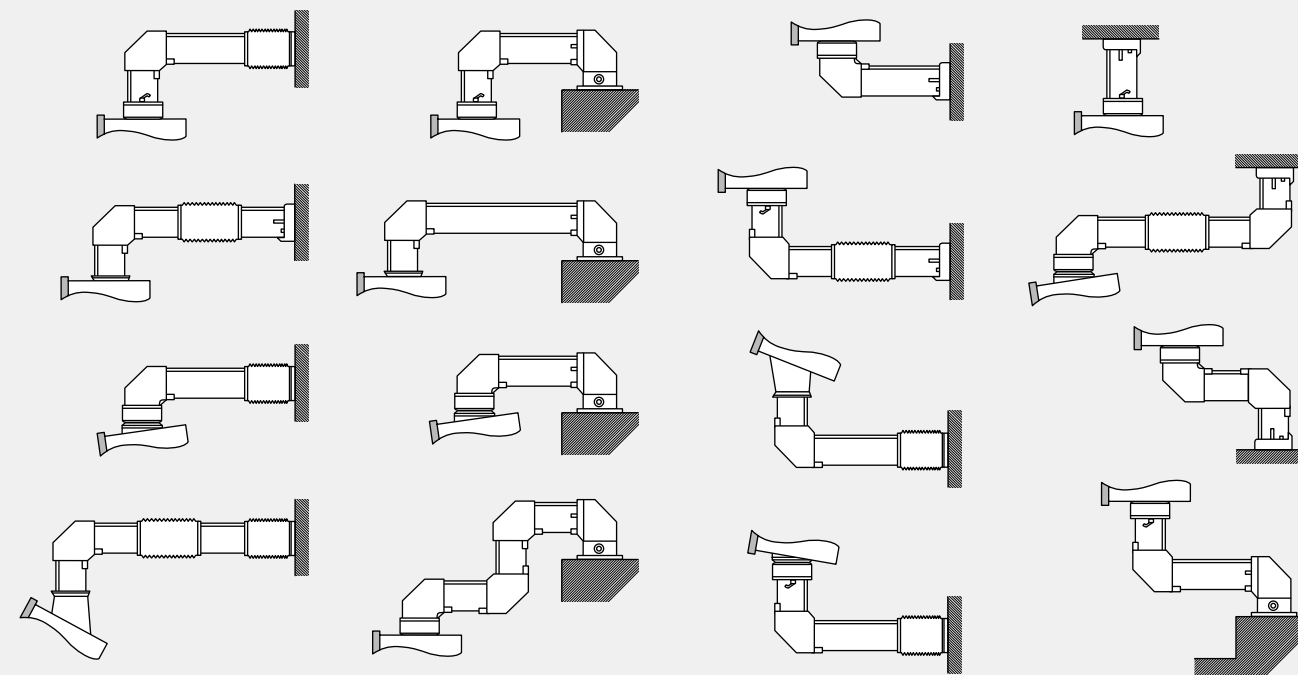


C: Open support section



\* Only once per system where possible!

## These Are A Few Examples From A Wide Range Of CP 6000 (CP-XL) Possibilities





# CP Pendant Arm Systems



## Operator Interface And Support Arm Systems

Rittal's CP-L and CP-S Series pendant arm systems were developed to offer a high degree of flexibility and ergonomic adaptation to the work environment required by today's sophisticated control technology. A wide variety of enclosures, support arm systems, and accessories combine to satisfy virtually any operator interface need.

### Configuration

- Self-tapping screws for easy and secure installation of the pendant arm system
- Torsion resistant extruded aluminum support arms have high load bearing capacity and attractive styling
- Extruded aluminum support arms can be easily cut to a required length
- Enclosures can swivel 350° with couplings
- 90° elbow coupling secures connection between support arm sections and also allows easy cable routing
- Enclosure coupling can be used for top bottom installation
- Couplings come with plastic covers which can be removed for easy access to wiring
- Any CP, VIP or Optipanel enclosure can be used

### Technical Specifications

#### Finish/color:

- Arm: RAL 7035 light grey
- Couplings: RAL 7030 stone grey

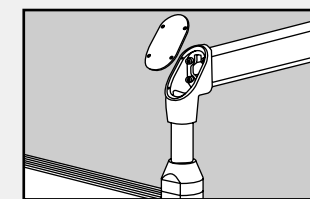
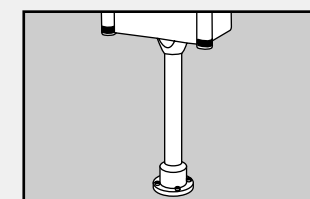
### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## CP-S Support Arm System



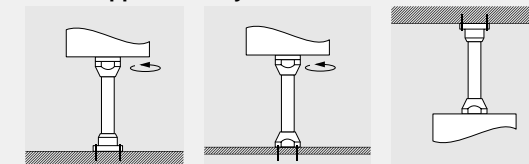
### System Benefits

- Compact support arm system for small operator enclosures.
- Easy and fast mounting through set screws on the support arm components.
- The horizontal connection to the larger CP-L support arm system allows longer extension support arms.
- 2 color combinations enable an individual design adjustment to complement the Optipanel (RAL 9006 and RAL 7024) or for CP enclosures in sheet steel, painted (RAL 7035 and RAL 7030) or combined (RAL 7035/RAL 7024).

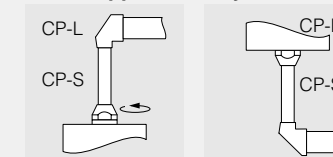
## NEW!

### Mounting Examples

#### CP-S Support Arm System



#### CP-S Support Arm System in combination with CP-L



- The movable components have a maintenance-free sliding bearing and the angle rotation can be limited.

#### Angle adaptor 90°, the connection to the support arm system CP-L

For connection to:

- Intermediate hinge
- Wall-mounted hinge
- Top-mounted hinge
- Wall/base mounting

The permitted load for vertical construction is 800 N (179.8 lbf), 80kg (176.4 lbs) total weight. The permitted load corresponds to the CP-L load diagram.

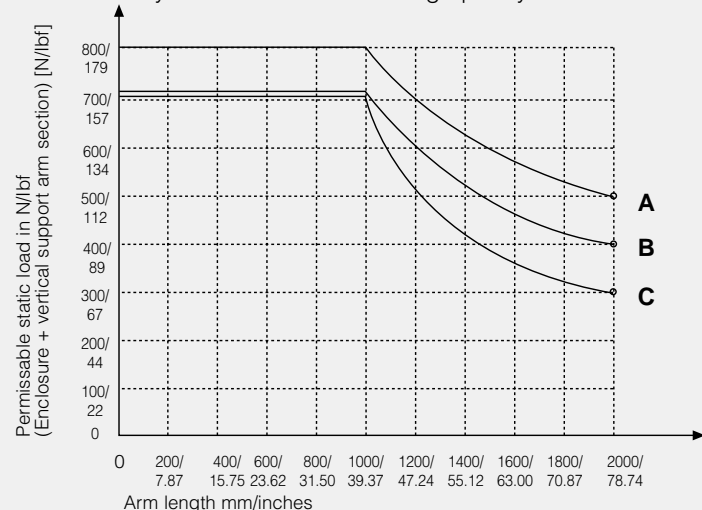
## Extensive Versatility-CP 6500 (CP-L)

The support arm system CP-L is designed for small and medium-sized command panels. It offers a whole range of connection and hinged parts, and hence a large number of possible applications.

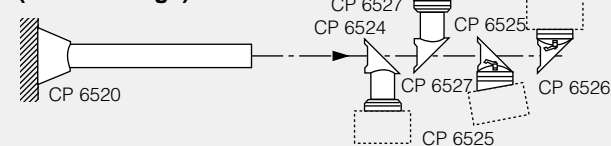
This ensures optimum operation at the interface between man and machine. In other words, the CP-L support arm system provides perfect back-up for optimum information exchange and user friendly handling of graphical interactive control systems.

### Permissible load depending on system configuration

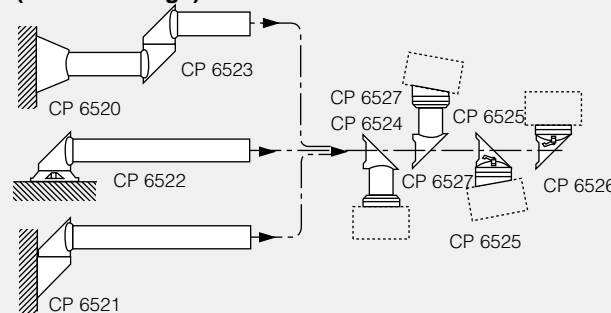
Only one CP 6523 swivel hinge per system



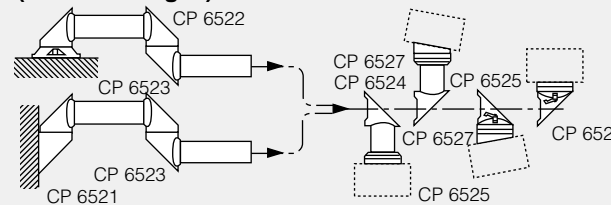
### A. System Configuration (without hinge)



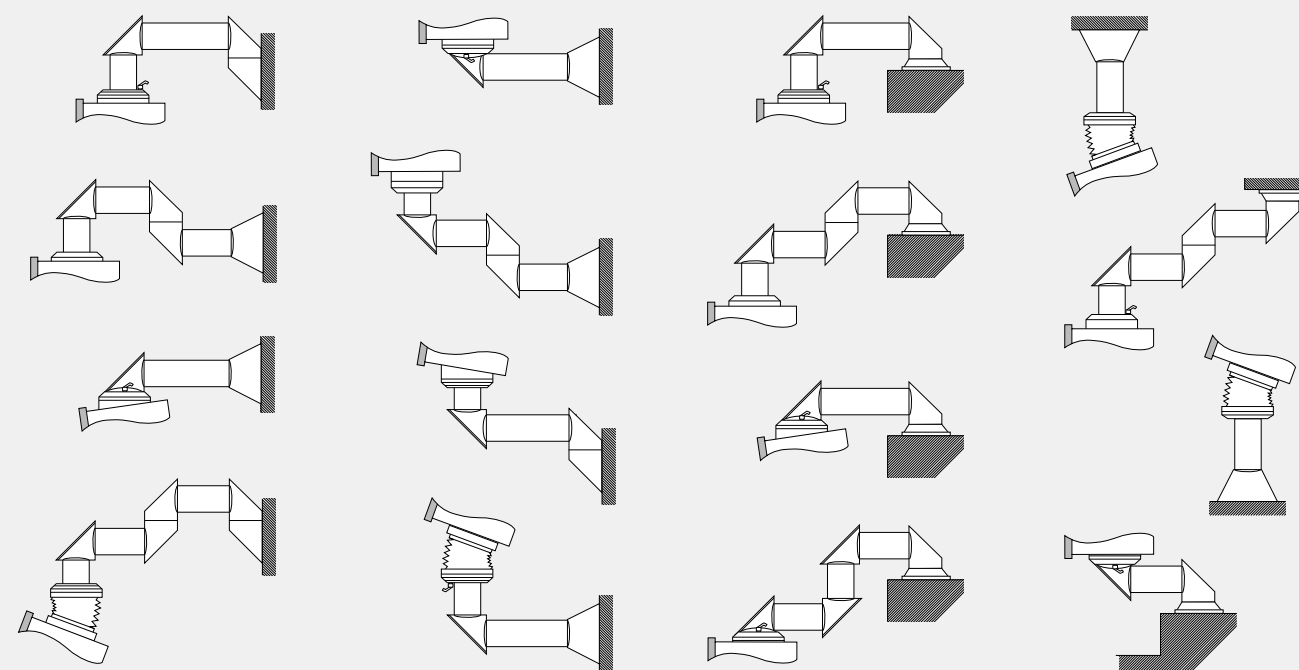
### B. System Configuration (with one hinge)



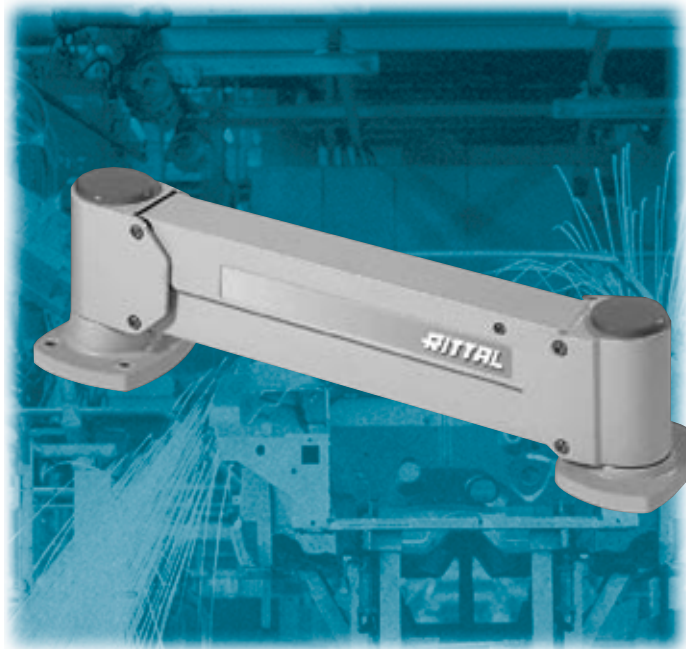
### C. System Configuration (with two hinges)



## These Are A Few Examples From A Wide Range Of CP 6500 (CP-L) Possibilities



# CP-Vertical Pendant Arm Systems



## Smart HMI Solutions

Rittal's new operator-driven CP-Vertical pendant arm systems allow any operator to comfortably use a plant floor operator interface device, regardless of the operator's height. To adjust height, the operator merely activates a release mechanism and the interface can be effortlessly repositioned at a new height or moved out of the way. The pendant arm uses a gas spring counterbalancing system that can be easily user calibrated to each system's load that assists in moving and locking the interface device in the desired vertical position.

What's more is, this pendant arm system can be easily incorporated with the new Optipanel enclosures that are specifically designed for flat panel displays. The CP-V System is also ideal for all of Rittal's Command Panel (CP) enclosures.

## Configuration

- **Sizes**
  - CP-V 5" H x 3" W x 26" L
  - CP-VL 5" H x 3" W x 31" L
  - CP-VXL 5" H x 3" W x 39" L
- **Vertical travel**
  - CP-V 13"
  - CP-VL 23"
  - CP-VXL 30"
- Adjusts to viewing height of each operator with simple motion
- Counterbalance can be adjusted by user for loads up to 100 lbs (depending on arm)
- 13", 23", or 30" of vertical adjustment
- Locks and unlocks with a convenient release mechanism
- Swivels at both ends
- Optional extensions and floor posts
- NEMA Type 4, 12 sealed cable passageway protects wiring
- Wallmount, machine top, post top or universal mounting options
- Universal mount incorporates the ability to post, wall, or machine mount CP-Vertical arm
- All arms can be easily reconfigured for inverted applications

**Note:** A release handle mechanism must be ordered for each arm

## Technical Specifications

- Material:**
- Aluminum
- Finish/color:**
- powder painted RAL 7035 light grey

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

**Pages** ..... HMI 77-78

Pendant Arm System			
Part No.	Description	Max. load	Vertical travel T
9967987	Post top/CP-V	100 lbs.	13"
9967988	Post top/CP-VL	75 lbs.	23"
9967989	Post top/CP-VXL	50 lbs.	30"
9967993	Wallmount/CP-V	100 lbs.	13"
9967994	Wallmount/CP-VL	75 lbs.	23"
9967995	Wallmount/CP-VXL	50 lbs.	30"
9967996	Machine top/CP-V	100 lbs.	13"
9967997	Machine top/CP-VL	75 lbs.	23"
9967998	Machine top/CP-VXL	50 lbs.	30"
9967999	Universal mount/CP-V	100 lbs.	13"
9968000	Universal mount/CP-VL	75 lbs.	23"
9968001	Universal mount/CP-VXL	50 lbs.	30"

Accessories	
Part No.	Description
9968002	6" Horizontal extension
9968003	12" Horizontal extension
9968004	18" Horizontal extension
9968005	24" Horizontal extension
9968006	18" Jointed extension arm
9968007	24" Jointed extension arm
9968008	4" Vertical extension piece
9968009	8" Vertical extension piece
9968010	12" Vertical extension piece
9968011	36" Floor post
9968012	74" Floor post
9968013	79" Floor post
9968014	Release handle W < 15 <sup>1 2</sup>
9968015	Release handle W > 15 <sup>1 2</sup>
9968016	Release handle for VIP wide bezel <sup>1 2</sup>

1 Must choose one release handle per arm.  
2 W = overall enclosure width.

### Each CP-Vertical Pendant Arm System Will Include The Following:

- CP-Vertical pendant arm that can be counterbalanced by the user based on load rating
- Mounting method (Post, Wallmount, Machine, Universal) will be attached to pendant arm
- A 4' release cable will be included
- Conversion wrench and instructions
- Hardware to attach enclosure to CP-Vertical arm

*Note: Hardware to attach the CP-Vertical pendant arm to mounting surface is not provided.*

### Below Is A Step-By-Step Guide To Selecting A CP-Vertical Pendant Arm System:

#### 1) Determine Maximum Load:\*

Maximum load = Weight of enclosure (lbs)  
+ total weight of all components mounted ON or INSIDE of enclosure

Maximum load (lbs) = \_\_\_\_\_

\* Load = Weight of enclosure + total weight of all components mounted inside enclosure

#### 2) Determine Proper CP-Vertical Pendant Arm Based On Load:

Select a vertical travel based on your maximum load calculation from above.

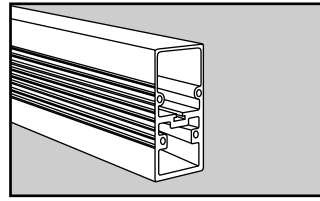
Maximum Load Range (+0%)	CP-V	CP-VL	CP-VXL
	13" Vertical Travel	23" Vertical Travel	30" Vertical Travel
0 to 50 lbs	Yes	Yes	Yes
51 to 75 lbs	Yes	Yes	No
76 to 100 lbs	Yes	No	No

#### 3) Determine Mounting Method:

Based on the CP-Vertical Pendant Arm you selected (i.e. CP-V, CP-VL, CP-VXL) in step #2, select a mounting method that best fits your application.

Mounting method	CP-V	CP-VL	CP-VXL
	13" Vertical Travel	23" Vertical Travel	30" Vertical Travel
	Part No.	Part No.	Part No.
Post top	9967987	9967988	9967989
Wallmount	9967993	9967994	9967995
Machine top	9967996	9967997	9967998
Universal*	9967999	9968000	9968001

# CP 6000 (CP-XL) Accessories



## CP 6000 Support Arm

The basic component of a CP 6000 pendant arm system. Connection components are attached with self-tapping screws and make combinations of any desired length possible.

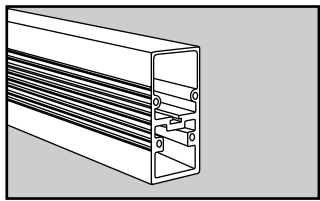
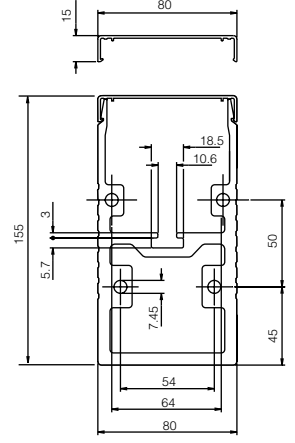
**Configuration:** bend- and torsion-resistant extruded aluminum complete with clip-on cover. Available in three different lengths.

**Color:** RAL 7035 light grey

**Weight:** support arm: 6.0 lbs/ft/9.05 kg/m

**Cover:** .3 lbs/ft/.45 kg/m.

CP 6000 Support Arm		
Length (inches/mm)	Packs of	Part No.
19.7/500	1	6050000
39.4/1000	1	6100000
78.7/2000	1	6200000



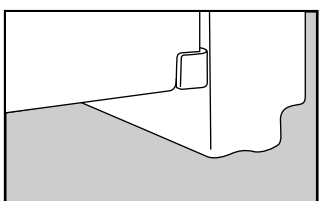
## CP 6000 Support Arm, Solid

The solution for higher weight loads. Approximately 20% more loading capacity than the clip-on cover support arm version.

**Color:** RAL 7035 light grey

**Weight:** 23 lbs/10.3 kg

Solid CP 6000 Support Arm		
Length (inches/mm)	Packs of	Part No.
19.7/500	1	6050500
39.4/1000	1	6100500
70.7/2000	1	6200500

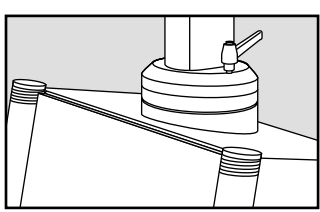


## Adjustment Shim

Allows subsequent adjustment of CP support arms.

**Material:** sheet steel, zinc coated, yellow chromate.

Adjustment Shim		
Adjustment shim	Packs of	Part No.
Adjustment shim	10	6205000



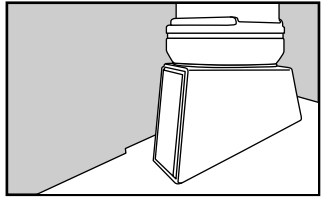
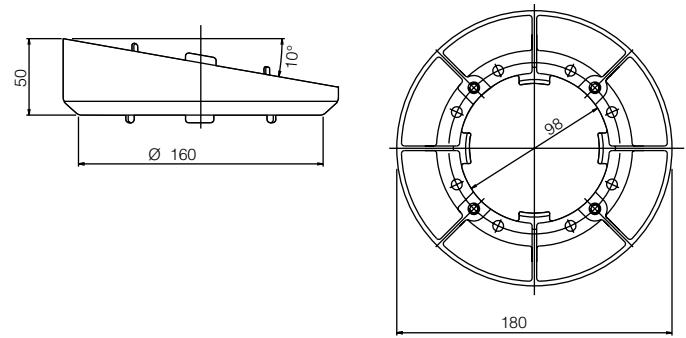
## 10° Tilting Adaptor

Tilts enclosure for increased user-friendliness; installed between housing and enclosure or 90° arm coupling.

**Material:** zinc diecast; comes with gaskets and installation hardware.

**Color:** RAL 7030 stone grey.

10° Tilting Adaptor		
Weight	Packs of	Part No.
2.6 lbs/1.2 kg	1	6023000



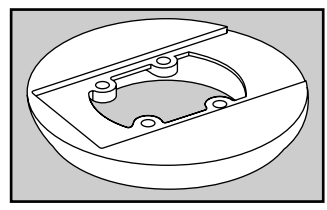
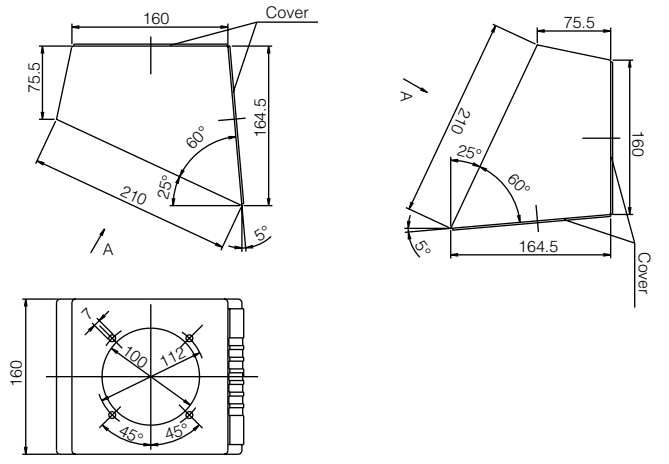
## Tilting Adaptor 25°/60°

Installs between enclosure and CP 6130 enclosure coupling; tilts 25° or 60°.

**Material:** zinc diecast; comes with gaskets and installation hardware.

**Color:** RAL 7030 stone grey.

Tilting Adaptor 25°/60°		
Weight	Packs of	Part No.
8.4 lbs/3.8 kg	1	6150000



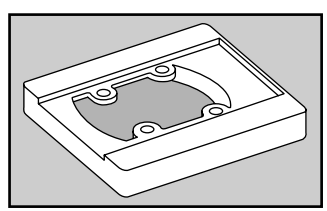
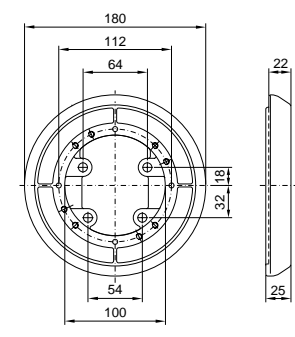
## Fixed Enclosure Coupling

For fixed attachment of the enclosure in conjunction with 10° tilting adaptor (CP 6023000) and 25°/60° tilting adaptor (CP 6150000).

**Configuration:** Die-cast zinc; including gasket and installation hardware. Not suitable for use as a base point for a support arm system.

**Color:** RAL 7030 stone grey.

Fixed Enclosure Coupling		
Weight	Packs of	Part No.
2.4 lbs/1.1 kg	1	6130600



## Fixed Enclosure Coupling

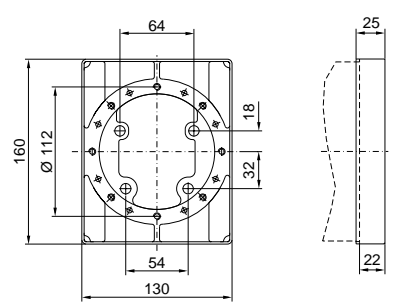
For rigid top or bottom mounting of enclosures to vertical support arms.

**Configuration:** zinc die-cast; includes gaskets and installation hardware.

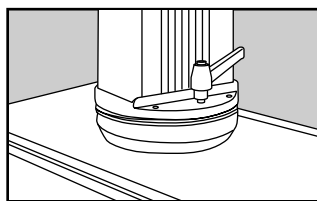
Not suitable for use as base bracket for a support arm system.

**Color:** RAL 7030 stone grey.

Enclosure Coupling, Fixed		
Weight	Packs of	Part No.
3.1 lbs/1.4 kg	1	6130500







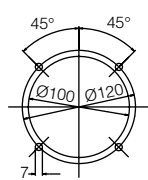
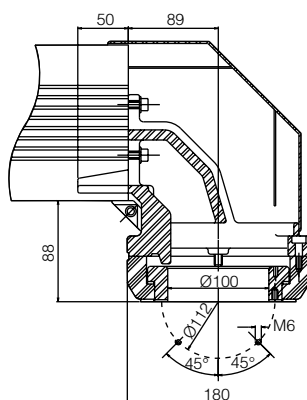
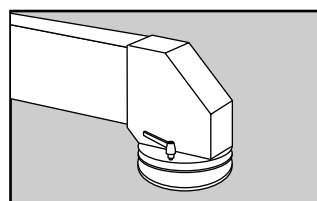
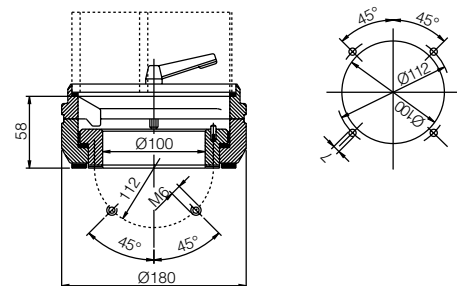
### Enclosure Coupling

For top or bottom installation of enclosures to vertical support arms.

**Material:** zinc diecast; enclosure rotates infinitely through 350° and adjustable; maintenance-free bearing; includes gaskets and installation hardware. Not to be used as a support arm base bracket.

**Color:** RAL 7030 stone grey.

Enclosure Coupling		
Weight	Packs of	Part No.
7.7 lbs/3.5 kg	1	6130000



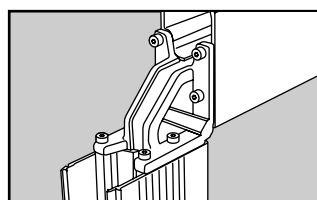
### 90° Enclosure Coupling

For top or bottom installation of enclosures to horizontal support arms without having to install an additional vertical support arm.

**Material:** spheroidal graphite iron and zinc diecast; rotates 180° and can be locked in place; maintenance-free bearing; plastic cover; gaskets and installation hardware. Not to be used as a support arm base bracket.

**Color:** RAL 7030 stone grey.

90° Enclosure Coupling		
Weight	Packs of	Part No.
12.1 lbs/5.5 kg	1	6040000



### 90° Arm Coupling

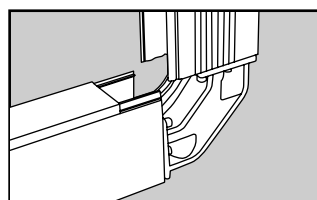
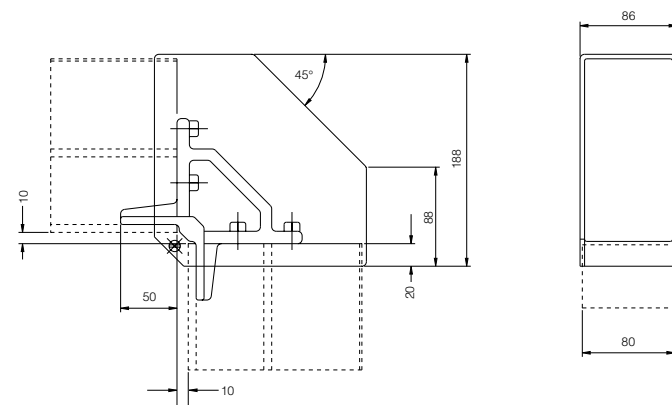
Connects vertical support arms to horizontal support arms.

**Material:** spheroidal graphite iron with protective plastic cover; gaskets and installation hardware.

**Color:** RAL 7030 stone grey.

**US Patent No. 4,997,155**  
**German Patent No. 38 05 422**  
**European Patent No. 0 330 027**  
 valid for FR, IT

90° Arm Coupling		
Weight	Packs of	Part No.
4.2 lbs/1.9 kg	1	6140000



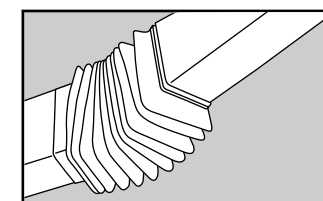
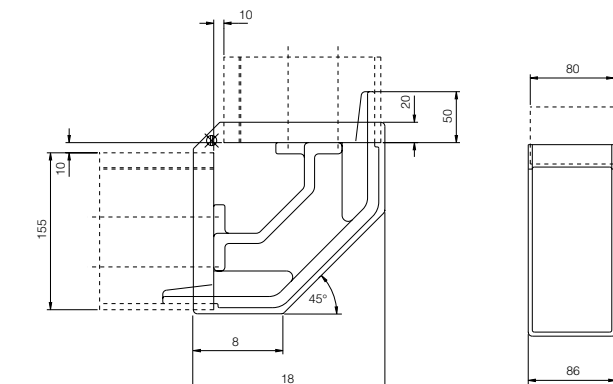
### 90° Arm Coupling (For Inverted Mounting)

Allows vertical support arm to be directed upwards from a lower, horizontal support arm at floor level which ensures trouble-free cable routing.

**Material:** spheroidal graphite iron with protective plastic cover; gaskets and installation hardware.

**Color:** RAL 7030 stone grey.

90° Arm Coupling		
Weight	Packs of	Part No.
7.0 lbs/3.2 kg	1	6180000



### Intermediate Hinge

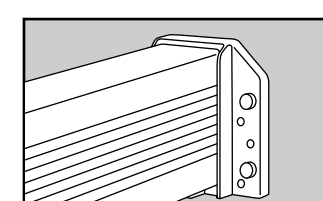
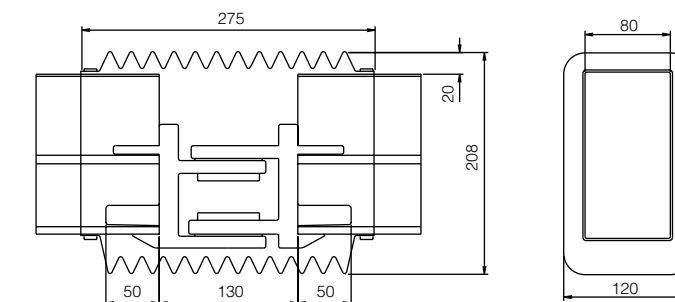
Connects horizontal suspension arms.

**Material:** spheroidal graphite iron; rotates 180°, includes bellows with zip fastener for easy access to cable duct; gaskets, and installation hardware.

**Color:** RAL 7030 stone grey.

**US Patent No. 4,998,702**  
**German Patent No. 38 05 424**  
**European Patent No. 0 330 029**  
 valid for FR, GB, IT

Intermediate Hinge		
Weight	Packs of	Part No.
13.4 lbs/6.1 kg	1	6120000



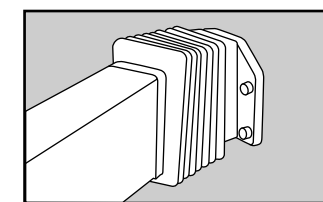
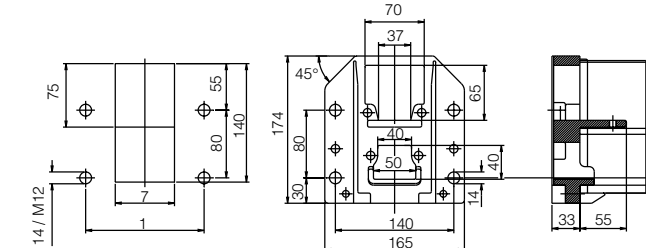
### Wall/Base Bracket

Allows rigid mounting of the pendant arm system to vertical or horizontal surfaces.

**Material:** spheroidal graphite iron, includes gaskets and installation hardware.

**Color:** RAL 7030 stone grey.

Wall/Base Bracket		
Weight	Packs of	Part No.
7.9 lbs/3.6 kg	1	6160000



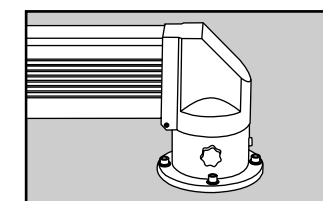
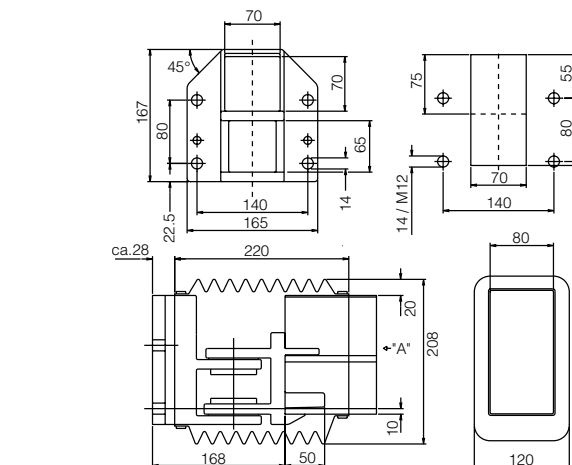
### Vertical Hinge

For installation of a swiveling pendant arm system to vertical surfaces.

**Material:** spheroidal graphite iron; rotates 180°, includes bellows, gaskets, and installation hardware.

**Color:** RAL 7030 stone grey.

Vertical Hinge		
Weight	Packs of	Part No.
18.5 lbs/8.4 kg	1	6110000



### Horizontal Hinge

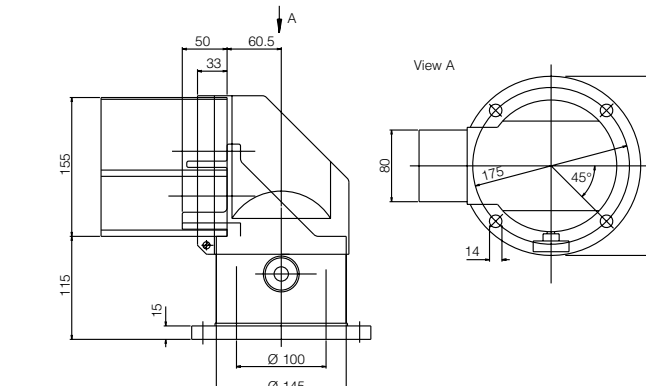
For installation of a swiveling pendant arm system to horizontal surfaces.

**Material:** steel and cast iron with plastic cover; maintenance free bearing, rotates 350°, with safety stop; includes gaskets and installation hardware.

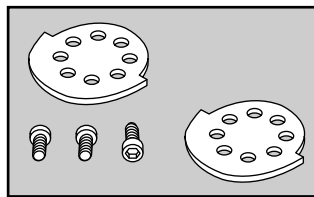
*Note:* Not to be used as an enclosure coupling.

**Color:** RAL 7030 stone grey.

Horizontal Hinge		
Weight	Packs of	Part No.
24.2 lbs/11.0 kg	1	6170000





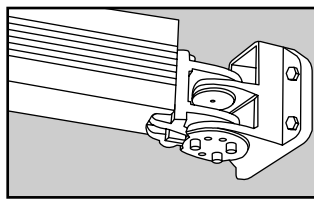


### Rotational Limiter For CP-XL

Suitable for:

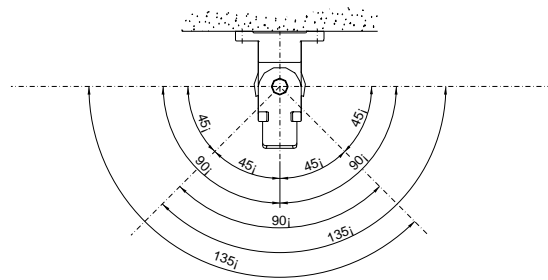
- Wall-mounted hinge CP 6110.000
- Intermediate hinge CP 6120.000

**Configuration:** 2 steel-washer, perforated, zinc-coated, chromated, including 3 cheese head screws for fixing.

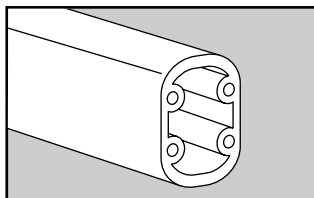


Rotational Limiter For CP-XL	
PU	Part No.
1 set	6110100

Adjustable swivel range:



## CP 6500 (CP-L) Accessories



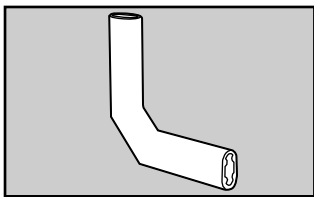
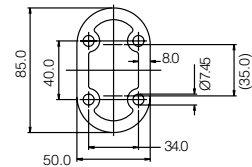
### CP 6500 Support Arm

The basic component of the pendant arm system.

**Material:** Bend- and torsion-resistant extruded aluminum. Integrated holes for self-tapping screws make combinations up to any desired length possible.

**Color:** RAL 7035 light grey  
**Weight:** 3.16 lbs/ft/4.7 kg/m.

CP 6500 Support Arm		
Length (inches/mm)	Packs of	Part No.
19.7/500	1	6511000
39.4/1000	1	6513000
78.7/2000	1	6515000



### Support Arm Angle 90°, CP-L

The alternative for the assembling of compact support arm systems enables simplified mounting and improves the aesthetics, in particular in connection with the wall/ bottom mounting, small (CP 6520.5X0).

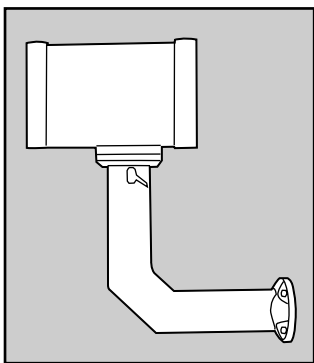
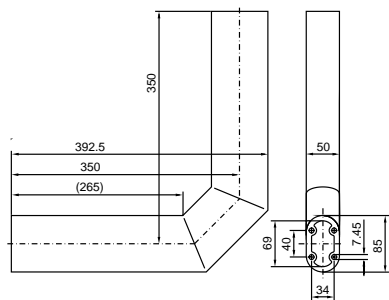
The support arm components are mounted on the angle through self-tapping screws, which means that the support profile can be cut to any required length.

**Configuration:** Torsionally stiff extruded aluminum section of high bending resistance.

**Weight:** 6.61 lbs/3 kg.

Support Arm Angle 90°, CP-L	
Color RAL	Part No.
7035 (light grey)	6519000
9006 (white-aluminum)	6519010

Available November 2001.



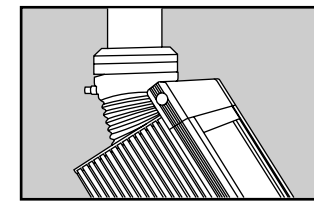
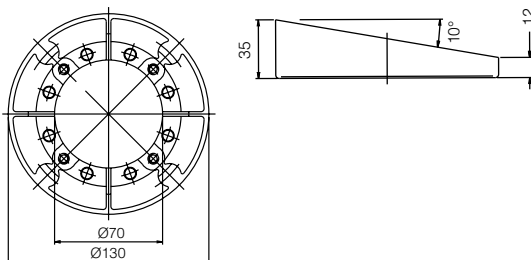
### 10° Tilting Adaptor

Tilts enclosure for increased operator friendliness; installed between housing and enclosure or 90° arm coupling.

**Material:** cast zinc; comes with gaskets and installation hardware.

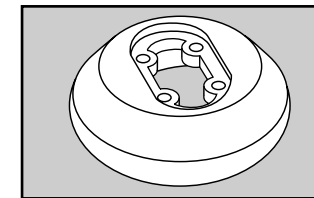
**Color:** RAL 7030 stone grey.

10° Tilting Adaptor		
Weight	Packs of	Part No.
1.3 lbs/.6 kg	1	6527000



### Tilt Adaptor +/-45° Adjustable

For flexible adjustment for optimum viewing angle of flat screen LCD displays. Can be mounted on pendant arm with a CP 6525 enclosure coupling or a CP 6526 90° enclosure coupling.

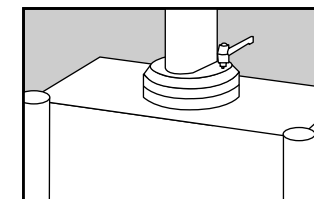


### Enclosure Coupling, Fixed

For fixed bottom mounting of enclosure to vertical support arm.

**Configuration:** zinc die-cast; includes gaskets and installation hardware. Cannot be used as a support base bracket.

**Color:** RAL 7030 stone grey.

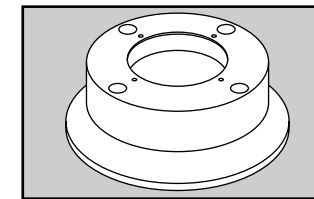


### Enclosure Coupling, Rotating

For top or bottom installation of enclosure to vertical support arm.

**Configuration:** maximum rotation 350°. Not to be used as a support arm.

**Color:** RAL 7030 stone grey.

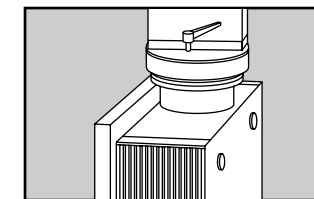


### Connection Adaptor VIP 6000 on Support Arm System CP-XL

For connections between VIP 6000 Command Panels with support arm connection CP-L and support arm system CP-XL.

**Design:** Cast aluminum, including seal and assembly parts.

**Color:** RAL 7030 stone grey.



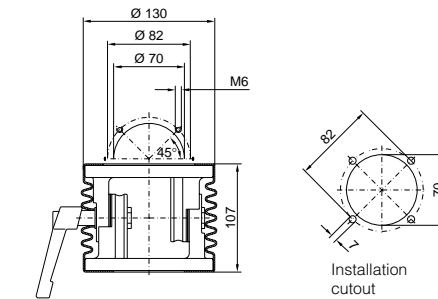
### 90° Enclosure Coupling

For top or bottom installation of enclosure to vertical support arm.

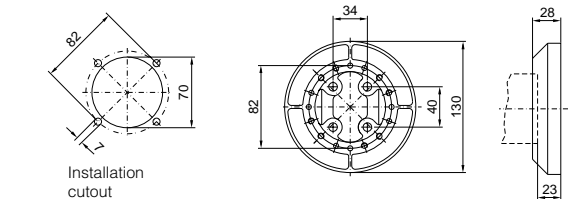
**Configuration:** maximum rotation 350°. Not to be used as a base mounting bracket.

**Color:** RAL 7030 stone grey.

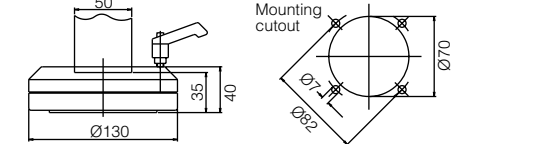
+/-45° Tilt Adaptor		
Weight	Packs of	Part No.
2.2 lbs/1.0 kg	1	6529000



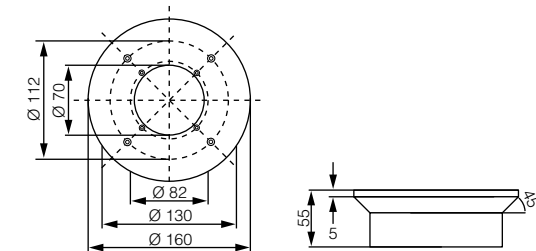
Enclosure Coupling, Fixed		
Weight	Packs of	Part No.
1.8 lbs/0.8 kg	1	6525500



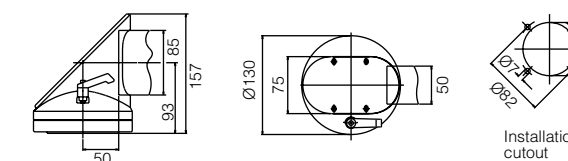
Enclosure Coupling		
Weight	Packs of	Part No.
3.3 lbs/1.5 kg	1	6525000

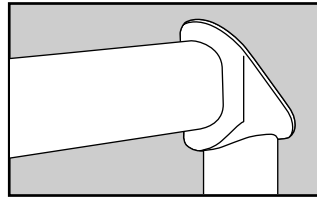


Connection Adaptor		
Weight	Packs of	Part No.
1.5 lbs/0.7 kg	1	6528500



90° Enclosure Coupling		
Weight	Packs of	Part No.
3.3 lbs/1.5 kg	1	6526000



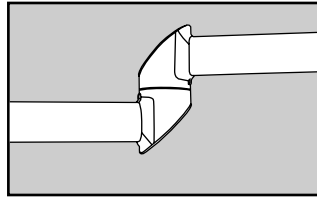
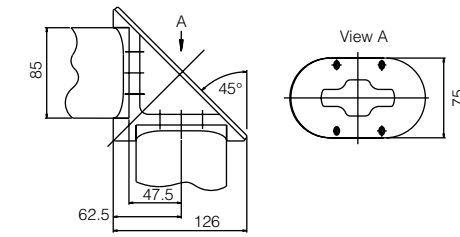


### 90° Arm Elbow

Connects horizontal and vertical support arms.

**Color:** RAL 7030 stone grey.

90° Arm Elbow		
Weight	Packs of	Part No.
1.1 lbs/0.5 kg	1	6524000



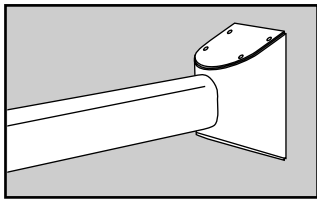
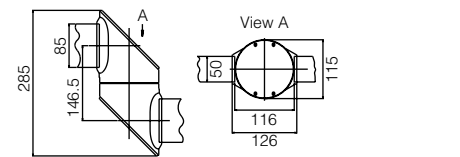
### Intermediate Hinge

Connects horizontal suspension arms.

**Configuration:** maximum rotation 350°.

**Color:** RAL 7030 stone grey.

Intermediate Hinge		
Weight	Packs of	Part No.
5.5 lbs/2.5 kg	1	6523000

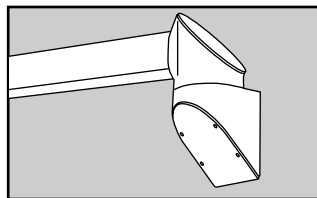
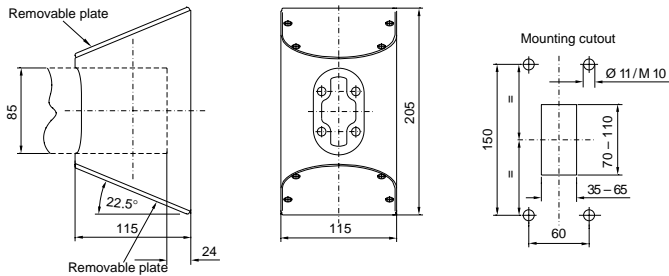


### Wall/Base Mounting Bracket

For rigid installation of a stationary suspension arm system to a vertical or horizontal mounting surface.

**Color:** RAL 7030 stone grey.

Wall/Base Mounting Bracket		
Weight	Packs of	Part No.
3.5 lbs/1.6 kg	1	6520000



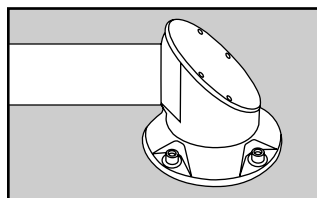
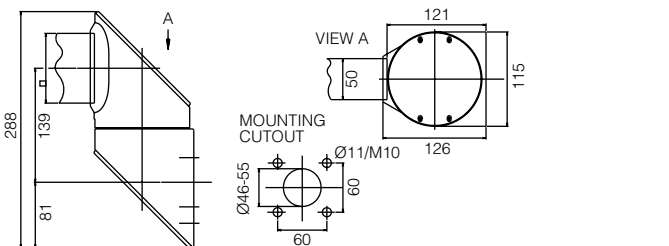
### Vertical Hinge

For installation of a swiveling support arm system to a vertical mounting surface.

**Configuration:** maximum rotation 350°, can be locked in place.

**Color:** RAL 7030 stone grey.

Vertical Hinge		
Weight	Packs of	Part No.
6.2 lbs/2.8 kg	1	6521000



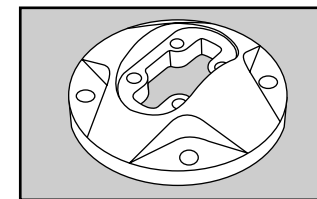
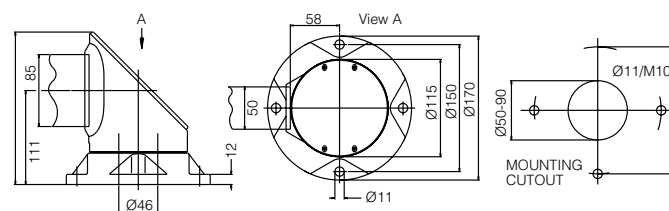
### Horizontal Hinge

For installation of a swiveling support arm to a horizontal mounting surface. Ceiling installation possible.

**Configuration:** maximum rotation 350° not to be used as a coupling for enclosures.

**Color:** RAL 7030 stone grey.

Horizontal Hinge		
Weight	Packs of	Part No.
5.5 lbs/2.5 kg	1	6522000



### Wall/Floor Mount, Small

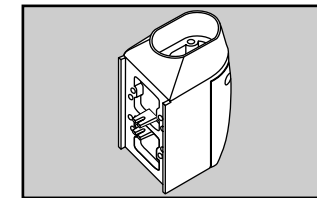
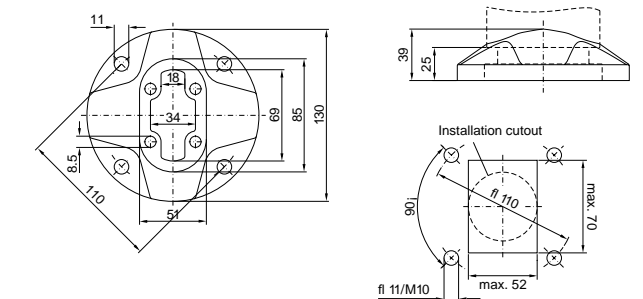
For fixed mounting of support arm systems on vertical and horizontal surfaces. Especially well suited for assembly of compact support arm systems with cable entry from the inside.

**Description:** aluminum die-cast, including gasketing and self-threading screws for CP-L support arm installation.

**Color:** RAL 7030 stone grey.

**Note:** standard screws may be used for the assembly of walls and floors.

Wall/Floor Mount, Small		
Weight	Packs of	Part No.
1.3 lbs/0.6 kg	1	6520500



### 90° Angle Adaptor, (6000 to 6500) (CP-XL to CP-L)

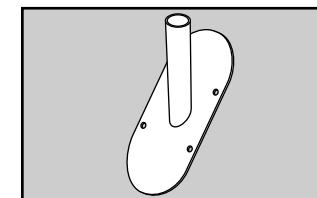
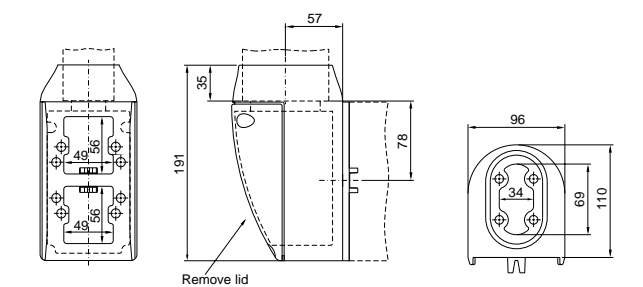
A coupling between

- horizontal support rail CP-XL and
- vertical support rail CP-L when the configuration is chosen for standard or aesthetic reasons.

**Description:** aluminum die-cast, including gaskets and self-threading screws for mounting of CP-L/CP-XL support arm.

**Color:** RAL 7030 stone grey.

90° Angle Adaptor, CP-XL to CP-L		
Weight	Packs of	Part No.
3.3 lbs/1.5 kg	1	6528100



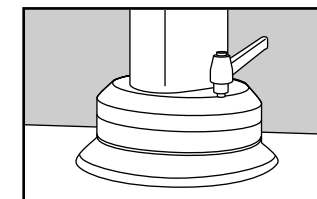
### Mounting Component for Support Arm System

For attaching a signal pillar with connection component for conduit mounting onto support arm system CP-L. To fit angle piece CP 6524.000 and angle coupling CP 6526.000

**Design:** sheet steel

**Color:** RAL 7030 stone grey.

Mounting Component		Part No.
Mounting component	For support arm system CP-L	2375000



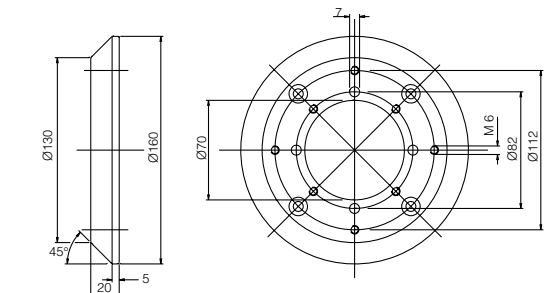
### Connection Adaptor

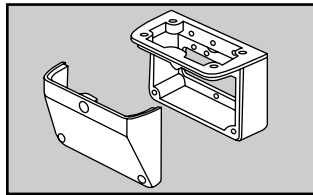
Makes following, interchangeable connection options possible.

- Connect CP 6000 enclosure to CP 6500 support arm system.
- Connect CP 6500 enclosures to CP 6000 support arm system.

**Material:** cast aluminum; powder painted, RAL 7030 stone grey.

Connection Adaptor		
Weight	Packs of	Part No.
1.1 lbs/0.5 kg	1	6528000





### Connection Housing CP-L

For connection on the rear side of a command panel onto support arm system CP-L via:

- Enclosure mounting 4.72 x 2.56"/120 x 65 mm (CP 6525.6X0)
- Enclosure coupling 4.72 x 2.56"/120 x 65 mm (CP 6525.1X0)
- Tilting adaptor 10° 4.72 x 2.56"/120 x 65 mm (CP 6527.1X0)

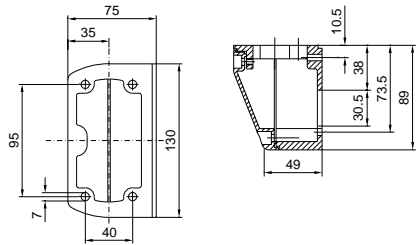
The removable cover enables simplified cable entry.

**Configuration:** Cast-aluminum, including seal and assembly parts for mounting on the enclosure as well as two cable ties.

**Weight:** 1.32 lbs/ 0.6 kg.

Connection Housing CP-L	
Color RAL	Part No.
7030 (stone grey)	6508000
7024 (graphite grey)	6508010

Available October 2001



### Optipanel Support Plate

For mounting on the enclosure profile. This enables the rear wall or door to be removed. This ensures easy access in case of service.

**Configuration:** Cast-aluminum, including seal and installation hardware.

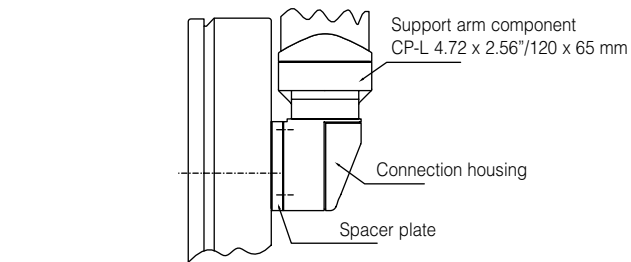
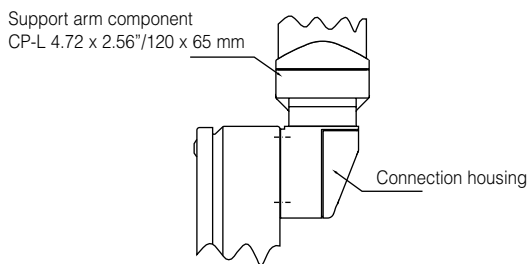
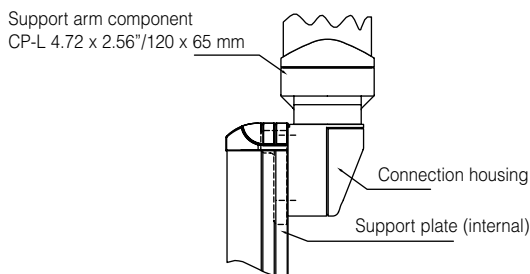
#### Mounting possibilities

- For retrofitting\* on Optipanel:  
In combination with the required support plate (see above) the connection console will be screwed directly on the Optipanel enclosure profile. This ensures solid connection and enables to remove the rear wall and rear door.  
\* The supply includes the connection housing and support plate as well as the rear wall and rear door with respective cutout, if they are selected per design code number.

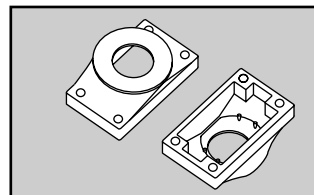
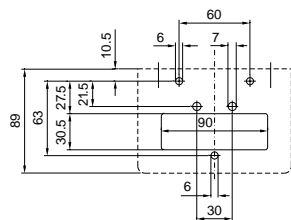
- For other enclosures for example:  
• Junction boxes  
• Cast aluminum enclosures:  
The connection console can be mounted:  
a) Directly and flush with the enclosure edge  
b) With spacer plate (available on request) on the rear wall of the enclosure. A reinforcement of the rear wall has to be tested for each individual case.

Optipanel Support Plate	
PU	Part No.
1 set	6508100

Available October 2001



Mounting cutout



### Connection Plate

with reinforcement plate

- Enables simplified attachment of the Command Panel on the support arm or pedestal.
- Easily attached from outside.
- More space for cable entry and clamping angle.

For mounting of:

- VIP 6000<sup>1)</sup>
- Optipanel<sup>2)</sup>
- Sheet steel – Command Panel<sup>3)</sup> on (see Table A)

<sup>1)</sup> From width of front plate 10.43"/265 mm. The CP-XL configuration not in connection with installation depth 6.10"/155 mm and 11.61"/295 mm.

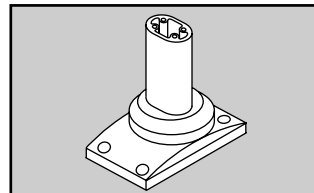
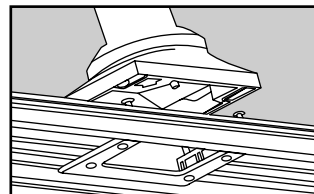
<sup>2)</sup> From width of front plate 11.61"/295 mm and installation depth 5.91"/150 mm.

<sup>3)</sup> Attachment surface, minimum W x D = 11.81" x 5.32"/300 mm x 135 mm (e.g. operator door enclosure).

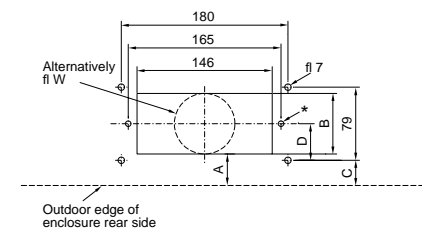
**Note:** The rectangle support arm cutout may be installed on request.

**Material:** Connection plate; cast aluminum.

**Configuration:** Including seal/ installation hardware.



#### Mounting cutout CP-L/CP-XL



Ø 0.23"/6 mm only for sheet metal enclosures to fix the reinforcement plate.

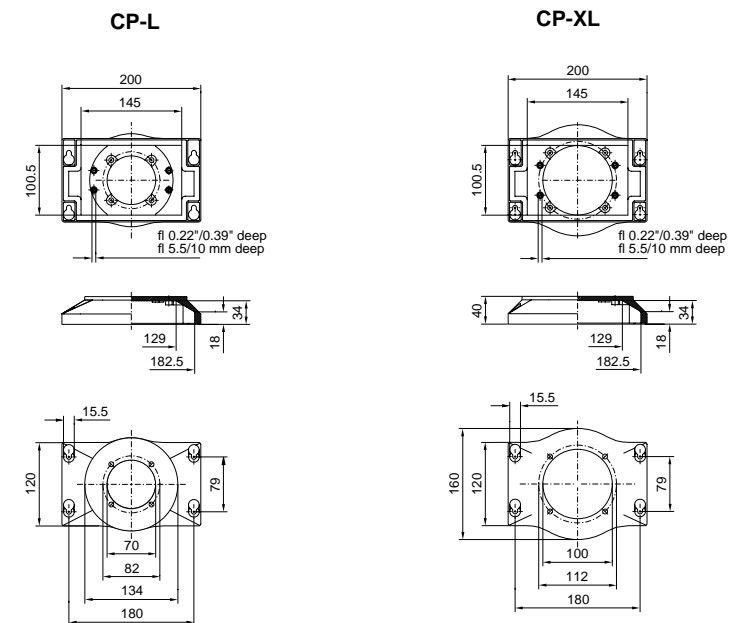
Connection Plate				
With support arm connection	Color RAL	Weight		Part No.
		lbs	kg	
CP-XL	7030	1.76	0.8	6528300
CP-L	7030	1.54	0.7	6528200
CP-L	7024	1.54	0.7	6528210

Table A		
Support arm components	CP-L	CP-XL
Enclosure mounting	CP 65255X0	CP 6130600
Enclosure mounting	CP 65250X0	CP 6130000
Angle coupling	CP 65260X0	CP 6040000
Tilt adaptor 10°	CP 65270X0	-
Tilt adaptor +/- 45°	CP 65290X0	-

Table B					
	Installation depth		A	B	C
	inches	mm			
VIP 6000	6.10 to 7.28	155 to 185	32	81	30.5
VIP 6000	11.61 to 17.24	295 to 438	174.5	81	173
Optipanel	5.91	150	34	65.5	30.5
Sheet metal enclosures	-	-	*	86	*

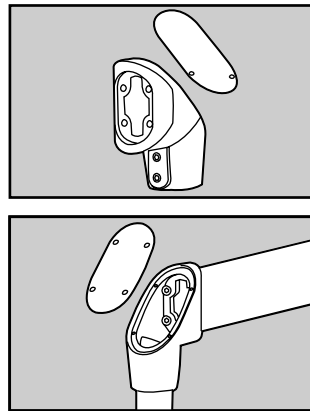
Available October 2001

\* Drillings/cutouts have to be located in the center of the reinforcement plate of the enclosure.





# CP-S Accessories



## Angle Adaptor 90°, CP-L To CP-S

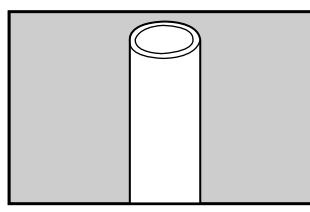
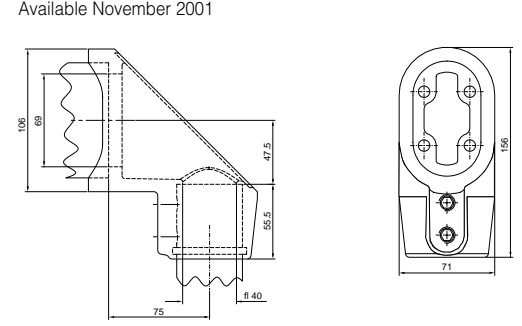
- For the connection between
- Horizontal CP-L support profile and
  - Vertical CP-S support profile.
- Angle adaptor can be on top or bottom, if system is
- Suspended or
  - Supporting.

The removable cover enables simplified cable entry.

**Configuration:** Cast aluminum, including seal and self-tapping screws for CP-L or set screws for CP-S support profile mounting.

**Weight:** 1.5 lbs/ 0.7 kg.

Angle Adaptor 90°	
Color RAL	Part No.
7030 (stone gray)	6501080
7024 (graphite gray)	6501090



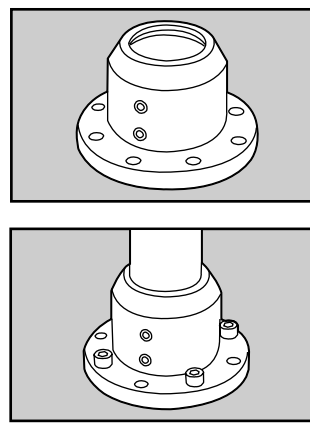
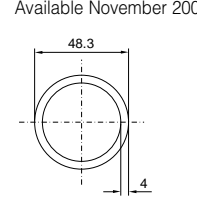
## Support Profile CP-S

For assembling a support arm system. The connection components are mounted on the support profile through set screws, which means that the support profile can be cut to any required length.

**Configuration:** Steel tube, outer diameter 1.9"/48.3 mm, wall thickness 0.15"/4 mm.

**Weight:** 9.7 lbs/ft (4.4 kg/m).

Support Profile CP-S			
Length		Color RAL	Part No.
inches	mm		
19.7	500	7035 (light grey)	6501000
19.7	500	9006 (white-aluminum)	6501010
39.4	1000	7035 (light grey)	6501020
39.4	1000	9006 (white-aluminum)	6501030



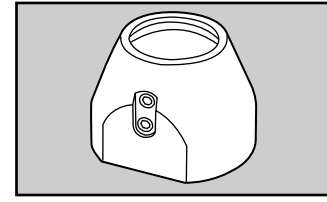
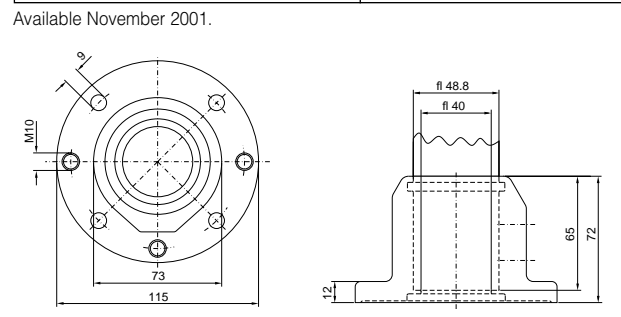
## Wall/Base Mounting Bracket CP-S

For rigid mounting of the support arm system on vertical or horizontal surfaces.

**Configuration:** Cast aluminum, including seal and two set screws for the support profile.

**Weight:** 1.32 lbs/0.6 kg.

Wall/Base Mounting Bracket CP-S	
Color RAL	Part No.
7030 (stone grey)	6501100
7024 (graphite grey)	6501110



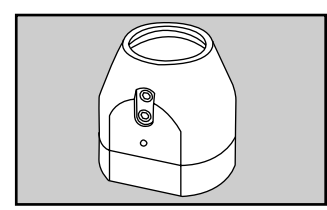
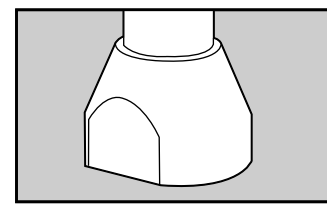
## Enclosure/Base Bracket CP-S, Fixed

- For rigid mounting:
- Of the enclosures onto the support arm,
  - Of the support arms on a vertical or horizontal mounting surface (fasteners are internal).\*

**Configuration:** Die-cast zinc, including seal and two set screws for the support profile.

\* Maximum load capacity 400 N (89.9 lbf), 88.2 lbs/40kg total weight.

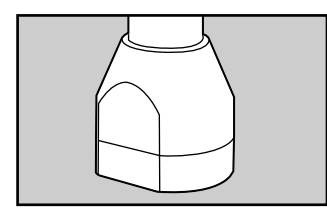
**Weight:** 2.65 lbs/1.2 kg.



## Enclosure Coupling CP-S, Rotating

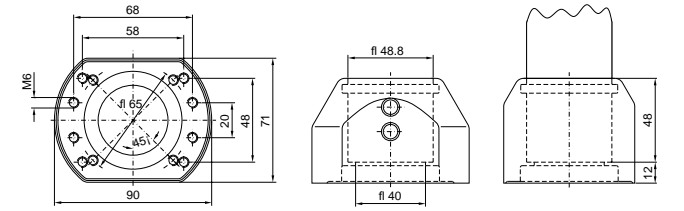
For swivel mounting of the enclosure to the CP-S support arm system. Two mounting cutout options are possible

- a) Circular pattern
  - b) Rectangular pattern
- Configuration:** Die-cast zinc, including seal and assembly parts.
- Rotation range approx. 350°, lockable. Not suitable for use as a base point for a support arm system.
- Weight:** 4.63 lbs/2.1kg.



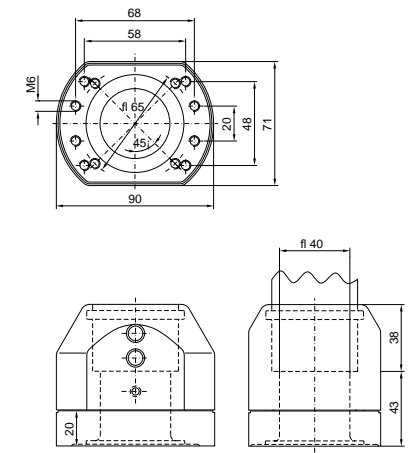
Enclosure/Base Bracket CP-S, Fixed	
Color RAL	Part No.
7030 (stone grey)	6501060
7024 (graphite grey)	6501070

Available November 2001.

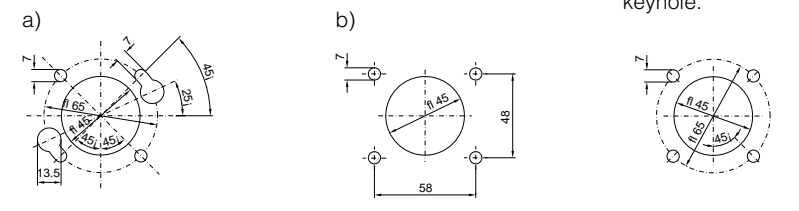


Enclosure Coupling CP-S, Rotating	
Color RAL	Part No.
7030 (stone grey)	6501040
7024 (graphite grey)	6501050

Available November 2001.



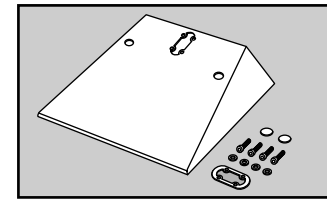
### Mounting cutout options



same as cutout a), however without keyhole.

Possible for Optipanel with installation depth 4"/100 mm. Please indicate under 2.3 (see Optipanel ordering form) additional to the construction code number 1 to 3 the letter S.

# Pedestal Accessories



## Pedestal Base, Small

With reinforcement bracket for the installation of support arm profile CP-L:

- rear with one hole for a standard M20 cable conduit connection.
- top with two holes (grommets) for bottom floor mounting cross rail.

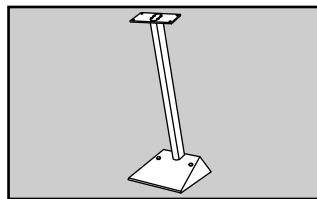
Small Pedestal Base	
PU	Part No.
1	6143200

**Note:** standard M8 screws are acceptable for bottom mounting.

**Material:** sheet steel 3/22"/2.5 mm

**Color:** RAL 7035 light grey.

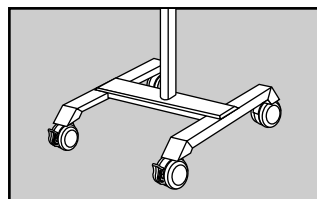




### Enclosure Flange CP-L

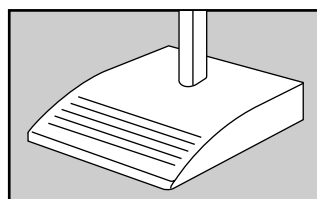
For the rigid installation of:

- KL enclosures 1515.210 (HWD 150 x 360 x 80 mm)
- mounted inside as reinforcement plate for all appropriately sized enclosures (also E-boxes and compact AE enclosures) in conjunction with:
  - enclosure coupling CP 6525000
  - enclosure mount CP 6525500
  - tilted adaptor CP 6526000 to support arm CP-L.



### Mobile Pedestal For CP 6000 And CP 6500

Offers operator friendliness and installation flexibility for CP operator enclosure applications. All CP and similar operator enclosures can be mounted on the special coupling plate of the CP 6136.000 mobile pedestal. Large casters facilitate easy movement, even on uneven floors; the front casters feature brakes.



### Pedestal/Platform

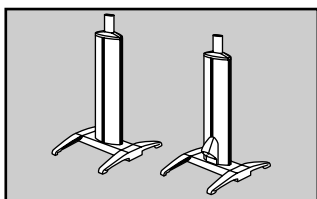
Provides a fixed, mobile pedestal mounting solution.

Standard configuration includes:

- knockouts for PG strain connector inserts
- integrated cable collecting angle
- knockout for concealed mounting of cable conduit adapters up to PG 36 or M 50.

With the following accessories:

- double wheel casters 7495.000
- leveling feet 4612.000



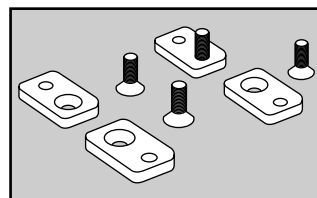
### Pedestal For Command Panel

Enclosure may be mounted via

- enclosure coupling CP 6525.500 (rigid).
- enclosure coupling CP 6525.000 (swivel).

Technical details:

Cast feet with holes for floor mounting.



### Base Mount For Pedestal For CP 6141 Enclosure

For secure mounting at the installation site.

- bracket is mounted to the pedestal with four countersunk screws in the existing threaded holes (M 12).
- bracket is mounted to the floor via through-holes (Ø11 mm), depending on the construction of the floor, with commercially available screws and dowels.

Enclosure Flange CP-L	
PU	Part No.
1	6143210

With installation materials for enclosure and support arm plus 2 gaskets.

Material: sheet steel

Color: RAL 7035 light grey.

Mobile Pedestal For CP 6000 And CP 6500	
Pedestal with mounting plate	Part No.
for CP 6500	6136500
for CP 6000	6136000

The base allows for easy cable entry while cables can be routed through the support pillar.

Configuration: mobile base, with 4 casters, including two with

integral brakes; support pillar. Only for CP 6136.000: special coupling; installation hardware.

Color: RAL 7030/7035 grey

Casters: RAL 9005 black.

Pedestal/Platform		
For support arm	Color RAL	Part No.
CP 6500	7035	6137535
CP 6000	7035	6137035

- wallmounting bracket KL 1580.000 or 1590.000 the pedestal can be customized for any environment.

Material: sheet steel

Finish: powder painted: RAL 7030 stone grey or RAL 7035 light grey textured

Configuration: pedestal/floor plate with integrated reinforcement and installation cutout for CP 6000 or CP 6500 support arms; includes installation hardware for support arms.

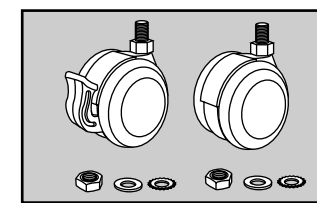
Pedestal For Command Panel			
Height		Cable conduit adaptor	Part No.
inches	mm	without	6141000
39.37	1000	with	6141100
39.37	1000	with	6141100

Support tubes:

- oval, twin-walled cover, easily opened from the outside. Cables may then be routed behind the cover for protection.

Base Mount For Pedestal	
Packs of	Part No.
1 set	6147000

Configuration: 4 base mounting brackets, 4 countersunk screws, M 12.

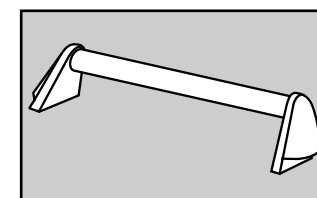


### Twin Casters For CP 6141000/100 Enclosures

For mobile use, easy installation. For:

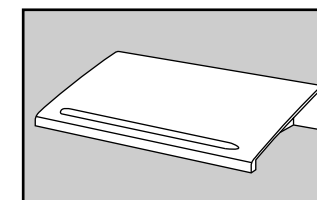
- pedestals CP 6141.000 and CP 6141.100.
- pedestal base plate CP 6137.030—CP 6137.535.

Load capacity per castor: 165 lbs/75 kg static load 2 twin casters with brake.



### Foot Rest For CP 6141000/100

Packs of 2 connector pieces, 1 round tube.



### Trim Panel For CP 6141000/100

May be installed front and rear.

Twin Casters	
Packs of	Part No.
1 set	6148000

Overall height: 3.5"/90 mm

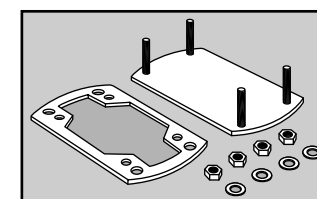
2 twin casters without brake

Color: black with grey wheels.

Foot Rest		
For pedestal	Packs of	Part No.
CP 6141000	1 set	6145100
CP 6141100		

Trim Panel		
For pedestal	Packs of	Part No.
CP 6141000	1	6144100
CP 6141100		

## Optipanel Accessories



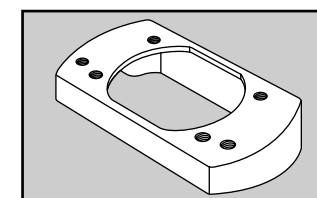
### Cover Plate

To cover an unused support arm cutout.

Material: sheet steel, clear chromate.

Configuration: cover plate with gasket, including installation material.

Cover Plate	
Support Arm Connection	Part No.
CP-L	6505100



### 10° Tilting Adaptor CP-L

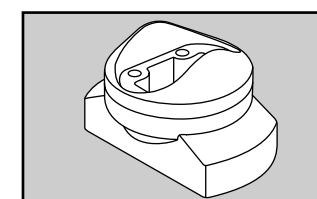
For installation between:

- enclosure coupling CP 6525.100 or
- enclosure coupling CP 6525.600 and housing.

Configuration: zinc die-cast; includes gasketing and installation materials. Not designed as a base for a support arm system.

Color: RAL 7030 stone grey.

10° Tilting Adaptor	
Weight	Part No.
1.10 lbs/0.5 kg	6527100



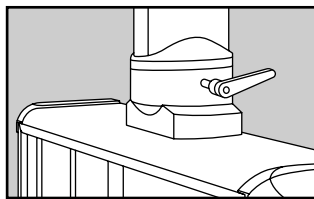
### Enclosure Mount CP-L, Fixed

For fixed installation of enclosure to support arm CP-L. Can be mounted to the top or bottom of an enclosure.

Configuration: zinc die-cast; includes gasketing and installation materials. Not designed as a base for a support arm system.

Color: RAL 7030 stone grey.

Enclosure Mount	
Weight	Part No.
2.20 lbs/1.0 kg	6525600

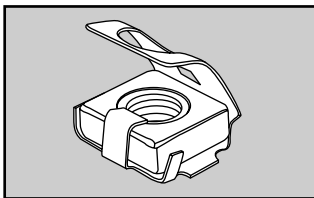


### Enclosure Coupling CP-L, Rotating

Rotating mount of enclosure to CP-L. Top or bottom mount.

**Configuration:** zinc die-cast including gasketing and installation materials. Approximately 350° rotation. Not designed as a base for a support arm.

**Color:** RAL 7030 stone grey.



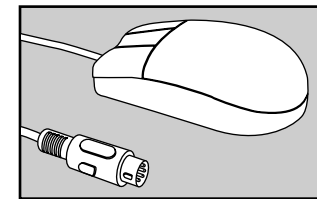
### M5 Springnut

For internal installation of components into Optipanel with depth of 4 and 6"/100 and 150 mm. Easy installation, the spring secures against undesired movement.

**Material:** steel, galvanized, chromated.

Enclosure Coupling	
Weight	Part No.
2.65 lbs/1.2 kg	6525100

M5 Springnut	
Packs of	Part No.
50	6108000



### NEMA 6/IP 67 Mouse/Mouse Pad

An ideal input device for all areas where heavy contamination is unavoidable, or where high standards of hygiene are crucial. Because the mouse detects positions inductively, there is no need for a trackball, and the housing is completely sealed with a protective film. This achieves a high protection category of IP 67/NEMA 6.

The mouse operates in conjunction with the inductive mouse pad IP 67 and is available for connection to either a COM or a PS/2 interface.

**Material:**

*Mouse pad:* plastic PBT

*Mouse:* plastic ABS

**Color:**

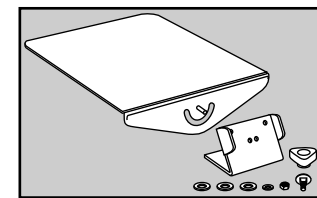
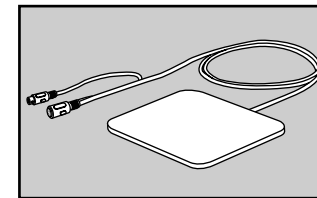
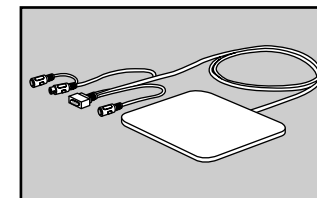
*Mouse pad:* similar to RAL 7032 grey

*Mouse:* similar to RAL 7032 grey

**Technical specifications:**

*NEMA 6/IP 67 mouse*

*Mouse connector:* DIN 7-pole

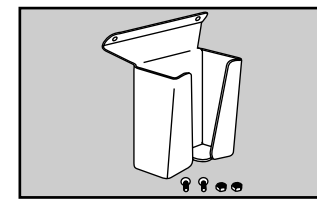


### Mouse Pad Tray

Is mounted on vertical handles of keyboard housings for accommodation of SM 6444.000 and SM 6444.500 IP 67 mouse pads. The slope of the mouse pad tray is infinitely adjustable. Installation requires drilling two installation holes in the handle grip brackets.

**Material:** sheet steel, chromated

**Configuration:** mouse pad tray, installation hardware.

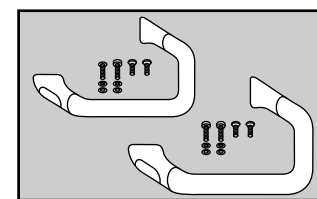


### Mouse Holder

Fits Rittal mouse pad trays to ensure safe storage of a standard mouse or the Rittal SM 6445.000 IP 67 mouse.

**Material:** sheet steel, chromated

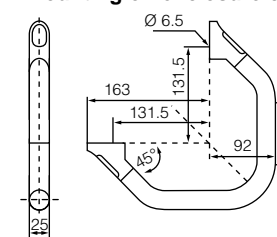
**Configuration:** mouse holder, installation hardware.



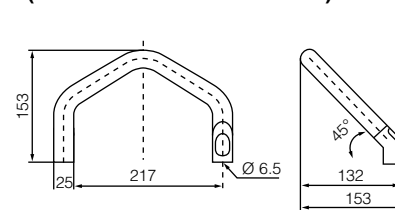
### Corner Handle

**Supply includes:** Packs of 4 handle holders, 2 handle tubes, assembly parts.

**Mounting on enclosure corner**



**Mounting on straight surfaces (90° rotation of handle holder)**



NEMA 6/IP 67 Mouse/Mouse Pad				
Part No.	Description	H x W x D inches	H x W x D mm	Packs of
6444000	Inductive mouse pad IP 67 COM interface	8 x 10 x .6	205 x 250 x 15	1
6444500	Inductive mouse pad IP 67 PS/2 interface	8 x 10 x .6	205 x 250 x 15	1
6445000	Mouse IP 67 for COM and PS/2 interface	-	-	1

**Mouse pad COM interface**

*Mouse pad—PC connection:* 9-pole D-SUB socket DIN 5-pole connector

**Mouse pad PS/2 interface**

*Mouse pad -PC connection:* PS/2 connector

**Temperature range:**

32°F to 131°F/0°C to 55°C

*Power consumption:* < 20 mA

*Pad size (H x W x D):*

8" x 10" x .6"/205 x 250 x 15 mm

IP 67/NEMA 4

*Cable lengths:* 2,000 mm

Runs under DOS, Windows 3.1/3.11, Windows 95/98, Windows NT

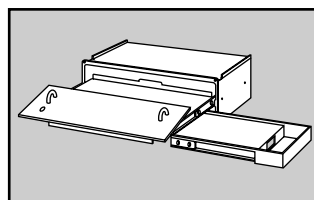
**Ratings:** IP 67/NEMA 4.

Mouse Pad Tray		
Description	Packs of	Part No.
Mouse pad tray	1	2381000

Mouse Holder		
Packs of		Part No.
1		2382000

Corner Handle		
Packs of		Part No.
1 set		6107000

## General Accessories



### Keyboard Drawer With Mouse Pad

19" front panel/3.5 U, for installation in:

- any sufficiently large space (door, side panel etc.).

The mouse pad is prepared to accept the inductive mouse pad NEMA 6/IP 67.

**Technical specifications:**

- space for keyboards up to H x W x D = 1.7" x 18.4" x 6.8" (42 x 460 x 170 mm)

*Mouse pad:*

- pulls out at the sides including mouse storage compartment for standard pads and prepared for NEMA 6/IP 67 mouse pad.

Keyboard Drawer With Mouse Pad			
Height	Width	Depth	Part No.
3.5 U	482.6 mm	251 mm	6003000

*Front panel:*

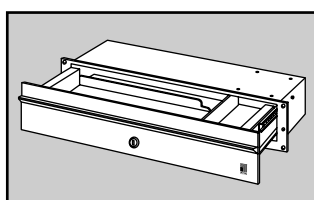
- folds out as a wrist support
- lockable, 3 mm double-bit insert may be exchanged for 27 mm inserts, version A, lock cylinder insert with lock no. 3524 E (SZ 2571.000).
- even with the drawer open, a high level of mechanical protection and shielding are retained.

**Material:**

*Drawer housing:* sheet steel, painted RAL 7035

*Front panel:* Aluminum, natural anodized

**Configuration:** keyboard drawer with mouse pad, including installation hardware and self-adhesive cable tie attachment.



### Keyboard Drawer 19"/2U

Can be mounted in all VIP 6000 enclosures and 19" systems or on any sufficiently large surface (door, side wall, etc.). Its low weight (5.5 lbs/2.5 kg) makes it ideal for use in support arm systems because adequate room remains for cabling, even when the support arm is connected from below. It can also be locked with a 3524 E lock.

High mechanical protection and shielding is maintained, even when the drawer is open.

**Technical data:**

- Total available space: 15.35" x 1.26" x 5.47"/390 x 32 x 139 mm

Keyboard Drawer With Mouse Pad			
Height	Width	Depth	Part No.
2 U	19"/482.6 mm	5.90"/150 mm	6002000

- Drawer has 2.35"/60 mm high space on right for a mouse or trackball or for a 3 1/2" disk drive.
- When a mouse is used or when a 3 1/2" disk drive is installed, only enough space remains for an 11.2"/284 mm wide keyboard.

**Material:**

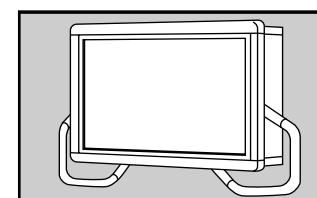
*Frame:* sheet steel, zinc-plated, chromated

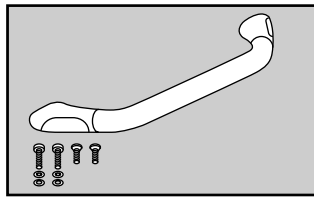
*Drawer housing and drawer:* aluminum

*Front panel and handle:* aluminum, natural anodized

**Configuration:** Drawer housing with drawer, includes slides with stops for 'open' position, front panel with handles, gasket and installation hardware.

**Note:** For installation in VIP 6000 operator enclosures we recommend cross members that are required for partitioning.

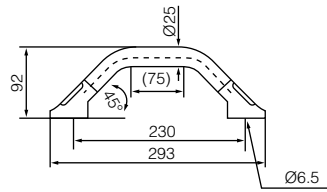
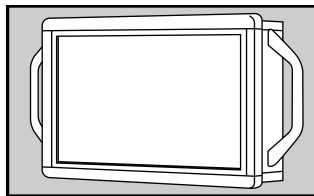




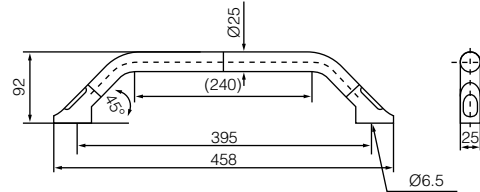
**U Handle**

**Supply includes:** packs of 2 handle holders, 1 handle tube, assembly parts.

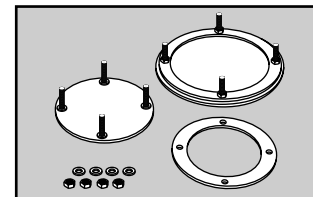
U Handle		
For front panel dimensions	Packs of	Part No.
7 U	1 set	6107100
19"/482.6 mm	1 set	6107200



**CP 6107100 Mounting on straight surfaces (for front panel size 7U)**



**CP 6107200 Mounting on straight surfaces for 19"/482.6 mm**



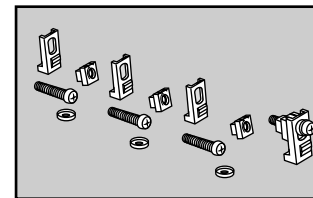
**Cover Plate**

For secure sealing of an unused support arm connection in the enclosure (CP-L, CP-XL).

**Material:** sheet steel, clear chromate

**Configuration:** cover plate with gasket, including installation hardware.

Cover Plate		
Support arm connection	Packs of	Part No.
CP 6000	1	6505000
CP 6500	1	6505500



**Mounting Kit**

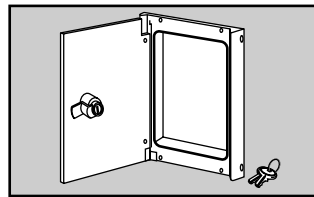
For installation of:

- aluminum front panels
  - control panels
  - keyboards
- in keyboard trays and keyboard housings.

Packs of 30, including clip-in clamps, cage nuts, screws, washers.

Mounting Kit	
Thread	Part No.
M4	6058000
M5	6053000

For installation of control panels with studs, only clip-in clamps are needed.



**Interface Box**

The Rittal interface box provides secure accommodation for all standard computer ports, disk drives and sockets. The lockable metal cover provides a high mechanical load-bearing capacity, protects against unauthorized access and ensures an increased shielding effect for the installed equipment.

**Material:**

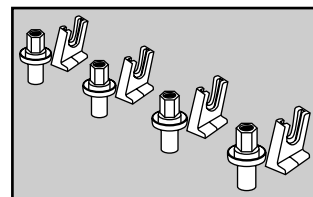
*Frame:* extruded aluminum section  
*Mounting tray:* sheet steel, 1.5 mm  
*Cover:* aluminum, 3.0 mm

Interface Box	
	Part No.
No socket	2482000

**Surface finish:**

*Frame and mounting tray:* powder coated in RAL 7035 light grey  
*Cover:* natural anodized

**Supply includes:** frame with hinged cover, cam with lock insert no. 3524 E, mounting tray including seal and installation hardware.



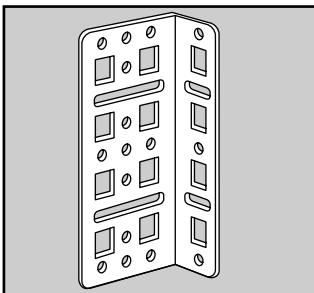
**Mounting Kit For Threaded Bolts**

for fastening

- aluminum front panels
- control panels
- keyboards

to VIP 6000 operator and keyboard housings with threaded bolts.

Mounting Kit	
Thread	Part No.
M4	6058500
M5	6053500



**Mounting Bracket/ Mounting Plate**

For universal interior installation. Allows for installation of additional Rittal accessories and customer supplied components.

**Material:** sheet steel, zinc plated, passivated

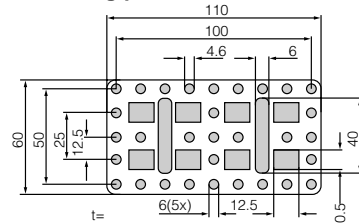
**Supply includes:**

4 mounting brackets or mounting plates 12 self-tapping screws M5 x 10 mm

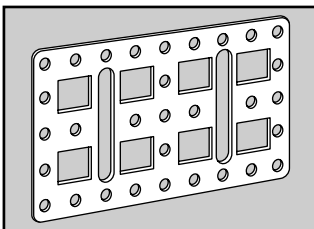
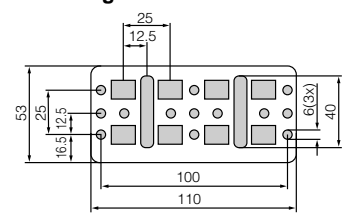
**Additional accessories:** screws for attaching to the screw channels of the VIP 6000 command panel, Part No. 2504000 (M5 x 10 mm), packs of 500.

Mounting bracket/Mounting plate	
	Part No.
Mounting bracket	4597000
Mounting plate	4532000

**Mounting plate**



**Mounting bracket**



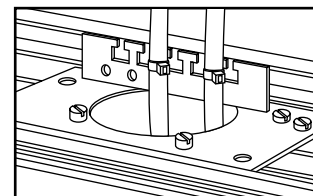
**Door Stop For VIP 6000**

To secure the open panel.

- For mounting at the bottom.
- The installation height is only reduced by 10 mm.
- Opening angle adjustable up to approx. 120°

**Material:** sheet steel, zinc plated, passivated.

Door Stop For VIP 6000	
	Part No.
Stay	6045000



**Cable Clamping Bracket For Operator Housing**

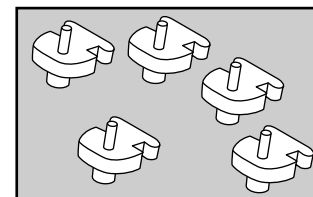
To fit support arm cutout CP-L and CP-XL. Cable clamping optionally via:

- cable clamps
  - cable ties for quick assembly SZ 2597.000
  - commercially available cable ties.
- Bracket height = 25 mm with fitted 40 mm C rail.

Cable Clamping Bracket	
	Part No.
Cable clamping bracket	6052000

**Material:** sheet steel, zinc plated, passivated.

**Supply includes:** 1 cable clamping bracket, 1 C rail 2 self-tapping screws M5 x 10 mm.



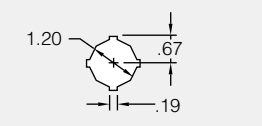
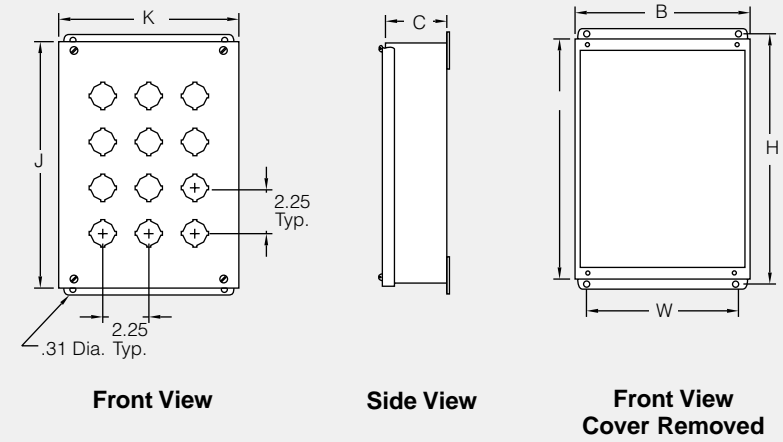
**Cable Tie Fastener**

For all commercially available cable ties up to a width of 4.8 mm. The fastener is inserted into the screw channel and fixed by hammering down the split rivet.

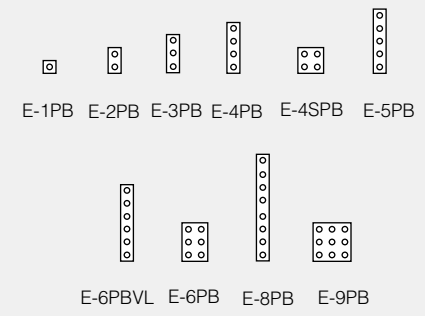
**Material:** polyamide 6.6

Cable Tie Fastener	
Packs of	Part No.
100	6059000

**Technical Specifications**  
Standard Pushbutton Boxes



**Standard 4-Way Keyed Pushbutton Hole Detail**

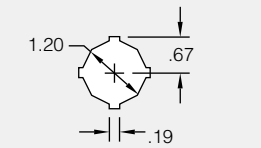
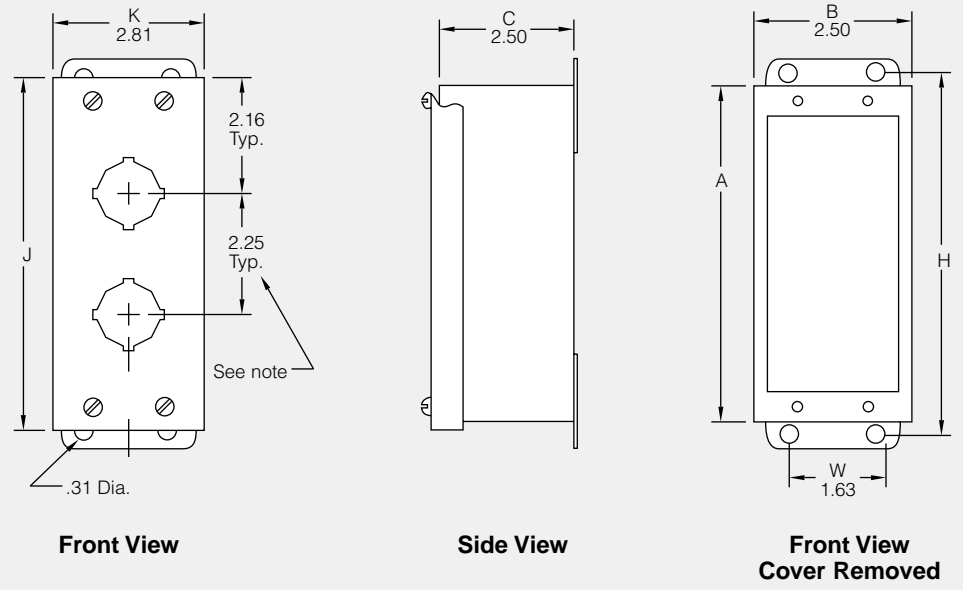


**Hole Arrangement Centered On Cover**

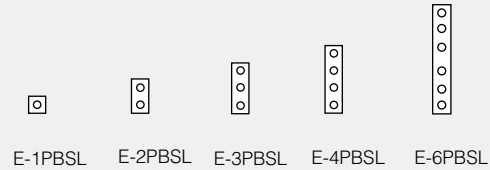
Pushbutton Box							
Part No.	Outside dimensions (inches)			Mounting centers		Cover size	
	H	W	D	H	W	J	K
<b>E 1PB</b>	3.50	3.25	2.75	4.00	2.38	3.81	3.56
<b>E 2PB</b>	5.75	3.25	2.75	6.25	2.38	6.06	3.56
<b>E 3PB</b>	8.00	3.25	2.75	8.50	2.38	8.31	3.56
<b>E 4PB</b>	10.25	3.25	2.75	10.75	2.38	10.56	3.56
<b>E 4SPB</b>	7.25	6.25	3.00	7.75	5.38	7.56	6.56
<b>E 5PB</b>	12.50	3.25	2.75	13.00	2.38	12.81	3.56
<b>E 6PBVL</b>	14.75	3.25	2.75	15.25	2.38	15.06	3.56
<b>E 6PB</b>	9.50	6.25	3.00	10.00	5.38	9.81	6.56
<b>E 8PB</b>	20.25	3.25	2.75	20.75	2.38	20.56	3.56
<b>E 9PB*</b>	9.50	8.50	3.00	10.00	7.63	9.81	8.81

\* Can be mounted to a Rittal Electromate column and base.

**Technical Specifications**  
Slim Pushbutton Boxes



**Standard 4-Way Keyed Pushbutton Hole Detail**



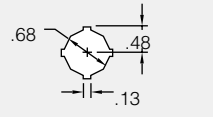
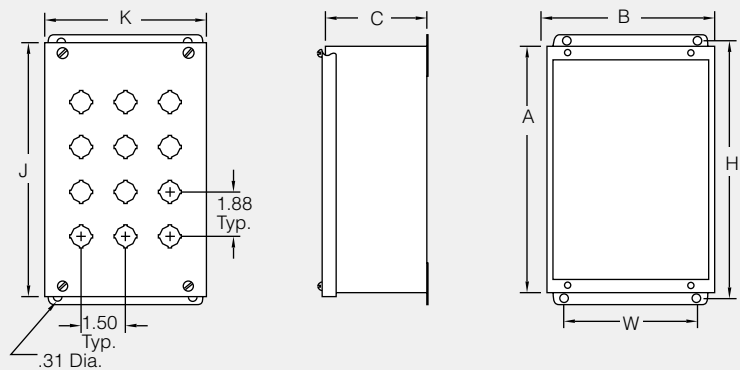
**Hole Arrangement Centered On Cover**

Pushbutton Box							
Part No.	Outside dimensions (inches)			Mounting centers		Cover size	
	H	W	D	H	W	J	K
<b>E 1PBSL</b>	4.00	2.50	2.50	4.50	1.63	4.31	2.81
<b>E 2PBSL</b>	6.25	2.50	2.50	6.75	1.63	6.56	2.81
<b>E 3PBSL</b>	8.50	2.50	2.50	9.00	1.63	8.81	2.81
<b>E 4PBSL</b>	10.75	2.50	2.50	11.25	1.63	11.06	2.81
<b>E 6PBSL*</b>	16.25	2.50	2.50	16.75	1.63	16.56	2.81

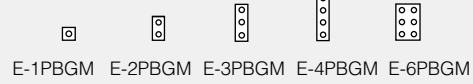
\* Add an additional 1" between pushbutton holes at center of enclosure.



**Technical Specifications**  
Miniature Pushbutton Boxes



**Standard 4-Way Keyed Pushbutton Hole Detail**

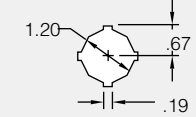
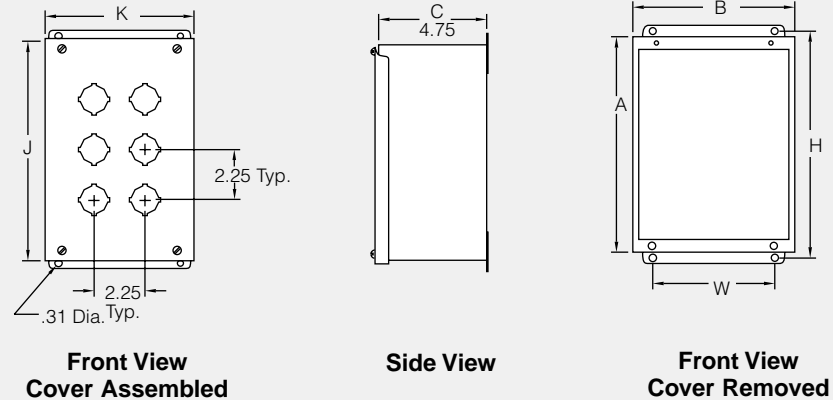


**Hole Arrangement Centered On Cover**

Pushbutton Box							
Part No.	Height A	Width B	Depth C	Mounting centers		Cover size	
				H	W	J	K
<b>E 1PBG</b>	3.25	2.75	3.50	3.75	1.88	3.56	3.06
<b>E 2PBG</b>	5.13	2.75	3.50	5.63	1.88	5.44	3.06
<b>E 3PBG</b>	7.00	2.75	3.50	7.50	1.88	7.31	3.06
<b>E 4PBG</b>	8.88	2.75	3.50	9.38	1.88	9.19	3.06
<b>E 6PBG*</b>	8.50	5.00	4.25	9.00	4.13	8.81	5.31

\* Can be mounted to a Rittal Electromate column and base.

**Extra Deep Pushbutton Boxes**



**Standard 4-Way Keyed Pushbutton Hole Detail**

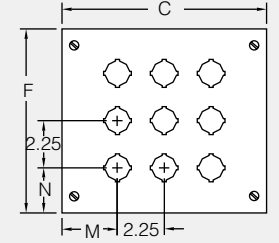
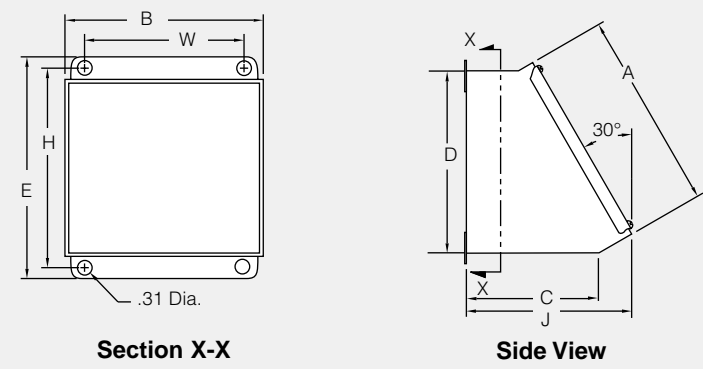


**Hole Arrangement Centered On Cover**

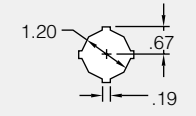
Pushbutton Box							
Part No.	Height A	Width B	Depth C	Mounting centers		Cover size	
				H	W	J	K
<b>E 1PBXD</b>	4.00	4.00	4.75	4.50	3.13	4.31	4.31
<b>E 2PBXD</b>	6.00	4.00	4.75	6.50	3.13	6.31	4.31
<b>E 3PBXD</b>	8.00	4.00	4.75	8.50	3.13	6.31	4.31
<b>E 4PBXD</b>	10.00	4.00	4.75	10.50	3.13	10.31	4.31
<b>E 6PBXD*</b>	9.50	6.25	4.75	10.00	5.38	9.81	6.56

\* Can be mounted to Rittal Electromate column and base.

**Technical Specifications**  
Sloping Front Pushbutton Boxes



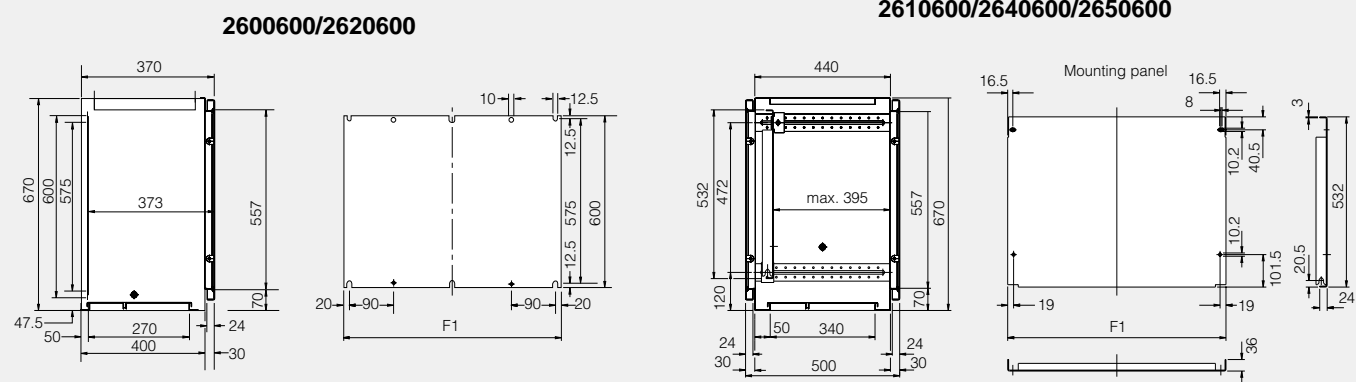
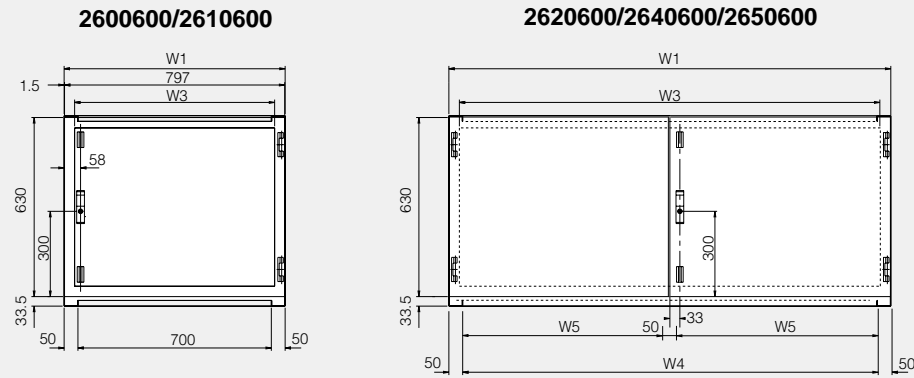
**Hole Arrangement**



**Standard 4-Way Keyed Pushbutton Hole Detail**

Pushbutton Box												
Part No.	Outside dimensions (inches)			Height of base D	Overall height E	Mounting centers		Cover size		Hole location		J
	H	W	D			H	W	F	G	M	N	
<b>E 1PBA</b>	3.50	3.25	4.88	3.53	4.53	4.03	2.38	3.81	3.56	1.78	1.91	3.38
<b>E 2PBA</b>	3.50	5.50	4.88	3.53	4.53	4.03	4.63	3.81	5.81	1.78	1.91	3.38
<b>E 3PBA</b>	3.50	7.75	4.88	3.53	4.53	4.03	6.88	3.81	8.06	1.78	1.91	3.38
<b>E 4PBA</b>	3.50	10.00	4.88	3.53	4.53	4.03	9.13	3.81	10.31	1.78	1.91	3.38
<b>E 4SPBA</b>	7.25	6.25	6.75	6.78	7.78	7.28	5.38	7.56	6.56	2.16	2.66	5.25
<b>E 6PBA</b>	7.25	8.50	6.75	6.78	7.78	7.28	7.63	7.56	8.81	2.16	2.66	5.25
<b>E 9PBA</b>	9.50	8.50	7.88	8.75	9.75	9.25	7.63	9.81	8.81	2.16	2.66	6.38

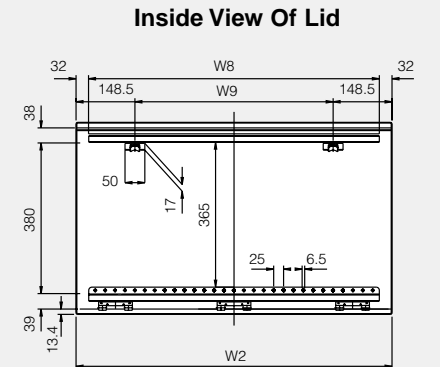
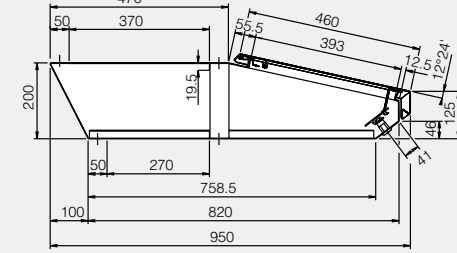
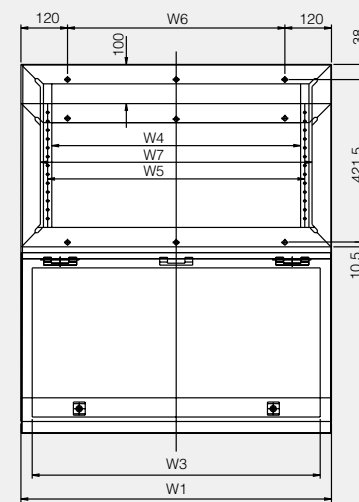
**Technical Specifications**  
AP Desk Consoles, Bottom Section



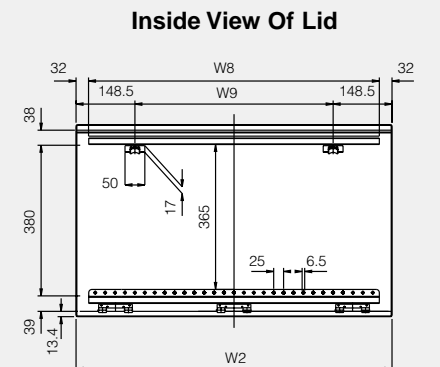
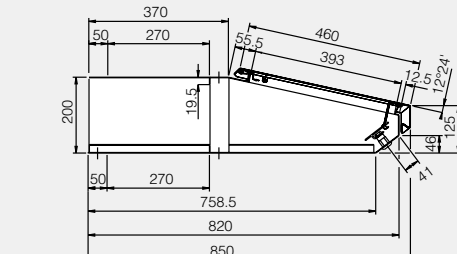
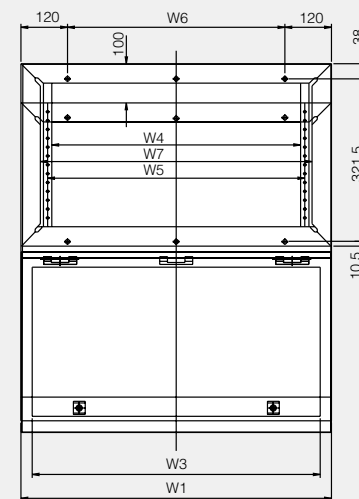
Enclosure						
Height (H1)	inches	26.38	26.38	26.38	26.38	26.38
	mm	670	670	670	670	670
Width (W1)	inches	31.50	31.50	47.24	47.24	62.99
	mm	800	800	1200	1200	1600
Depth (D)	inches	15.75	19.69	15.75	19.69	19.69
	mm	400	500	400	500	500
<b>Part No.</b>		<b>2600600</b>	<b>2610600</b>	<b>2620600</b>	<b>2640600</b>	<b>2650600</b>
W3		724	724	1124	1124	1524
W4		-	-	1100	1100	1500
W5		-	-	525	525	725
F1		715	702	1115	1102	1502
No. doors		1	1	2	2	2
Weight	lbs	95.7	115.5	137.5	165.2	211.5
	kg	43.5	52.5	62.5	75.0	96.0

**Technical Specifications**  
AP Desk Consoles, Center Section

2613200/2643200/2653200



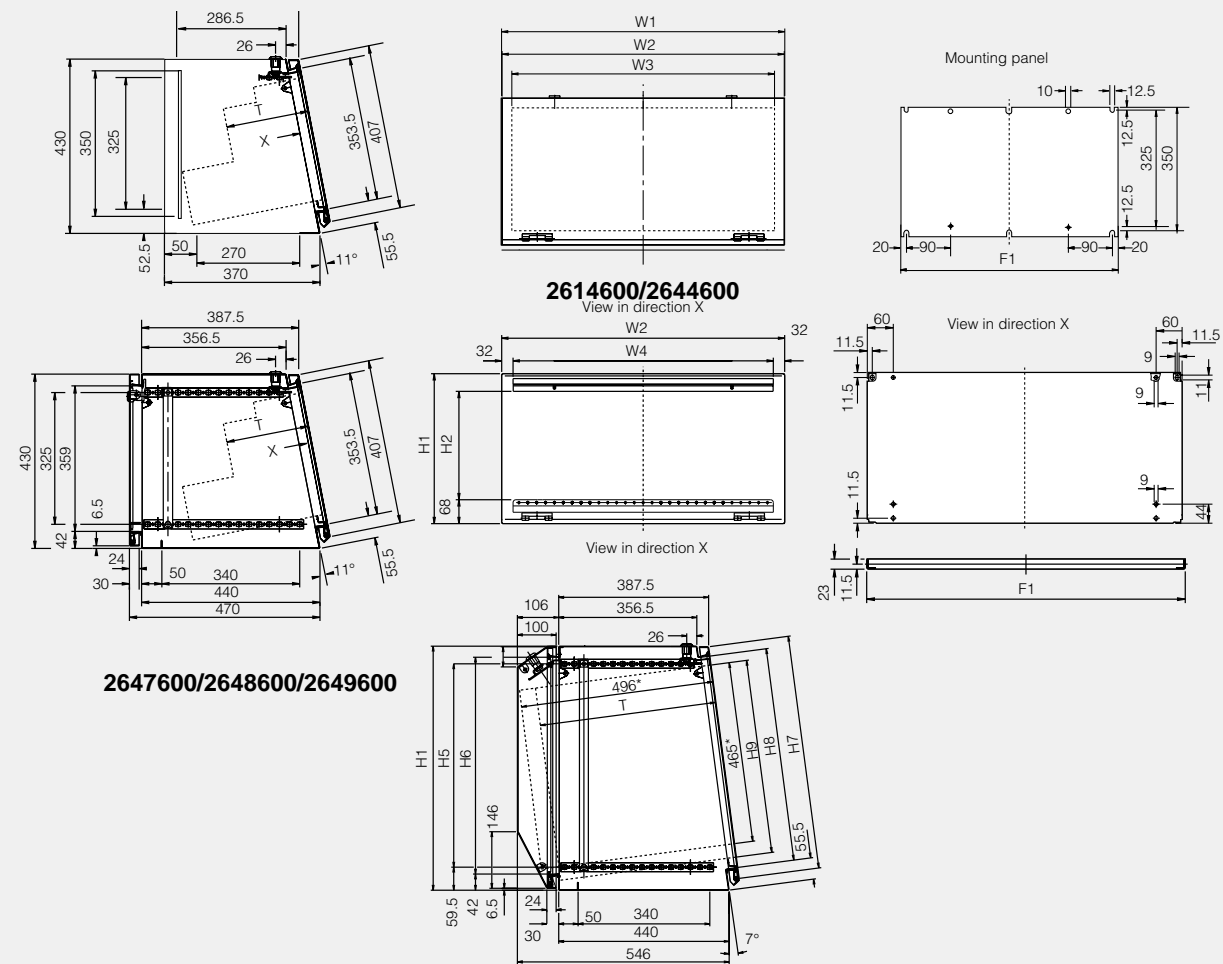
2611200/2641200



Enclosure						
Height	inches	7.87	7.87	7.87	7.87	7.87
	mm	200	200	200	200	200
Width (W1)	inches	31.50	31.50	47.24	47.24	62.99
	mm	800	800	1200	1200	1600
Depth	inches	15.75	19.69	15.75	19.69	19.69
	mm	400	500	400	500	500
<b>Part No.</b>		<b>2611200</b>	<b>2613200</b>	<b>2641200</b>	<b>2643200</b>	<b>2653200</b>
W2		797	797	1197	1197	1597
W3		742	742	1142	1142	1542
W4		640	640	1040	1040	1440
W5		660	660	1060	1060	1460
W6		560	560	960	960	1360
W7		700	700	1100	1100	1500
W8		733	733	1133	1133	1533
W9		500	500	900	900	2 x 650
Weight	lbs	56.1	67.3	78.1	93.7	116.2
	kg	25.5	30.6	35.5	42.6	52.8

### Technical Specifications

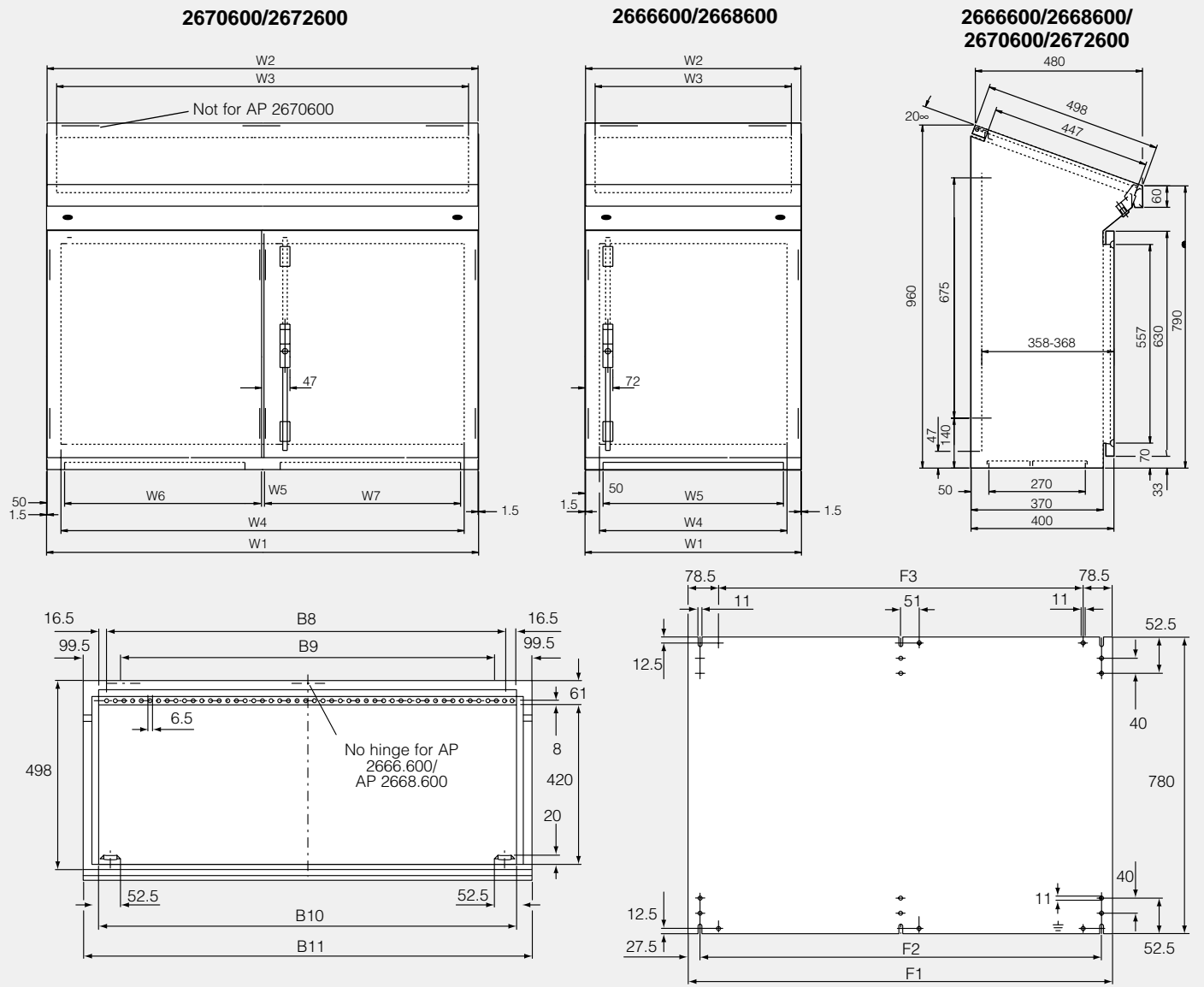
#### AP Desk Consoles, Top Section



Enclosure								
Height	inches	16.93	16.93	16.93	16.93	24.80	24.80	24.80
	mm	430	430	430	430	630	630	630
Width (W1)	inches	31.50	31.50	47.24	47.24	31.50	47.24	62.99
	mm	800	800	1200	1200	800	1200	1600
Depth	inches	15.75	19.69	15.75	19.69	23.62	23.62	23.62
	mm	400	500	400	500	600	600	600
Part No.		2612600	2614600	2642600	2644600	2647600	2648600	2649600
H1		422	422	422	422	622	622	622
H2		304	304	304	304	504	504	504
H3		-	-	-	-	623.5	623.5	623.5
H4		-	-	-	-	548	548	548
H5		-	-	-	-	525	525	525
H6		-	-	-	-	559	559	559
H7		-	-	-	-	607	607	607
H8		-	-	-	-	550	550	550
H9		-	-	-	-	500	500	500
W2		797	797	1197	1197	797	1197	1597
W3		742	742	1142	1142	742	1142	1542
W4		733	733	1133	1133	733	1133	1533
W5		-	-	-	-	732	1132	1532
W6		-	-	-	-	500	900	1300
T rotatable, 3HU		300	300	300	300	300	500	500
T rotatable, 6HU		195	195	195	195	195	395	395
T rotatable, max. height		110	110	110	110	310	310	310
T fixed, max. height		300	430	300	430	455	455	455
F1		715	727	1115	1127	727	1127	1527
G1		-	348	-	348	548	548	548
Weight	lbs	49.5	67.3	88.0	105.6	105.1	141.68	190.9
	kg	22.5	30.6	40.0	48.0	47.8	64.4	86.8

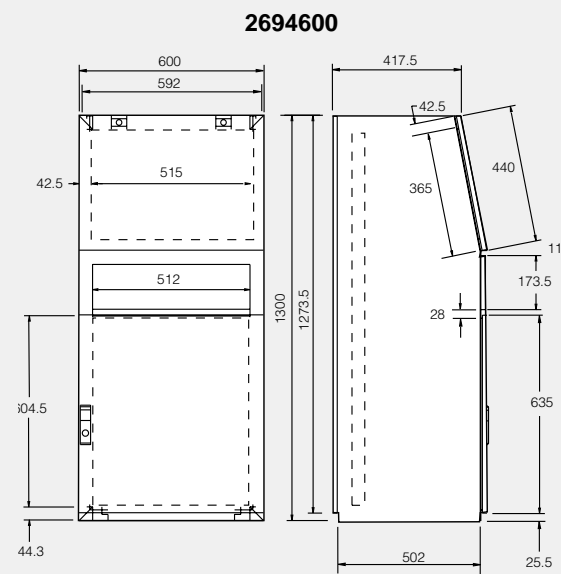
### Technical Specifications

#### AP Desk Console Systems

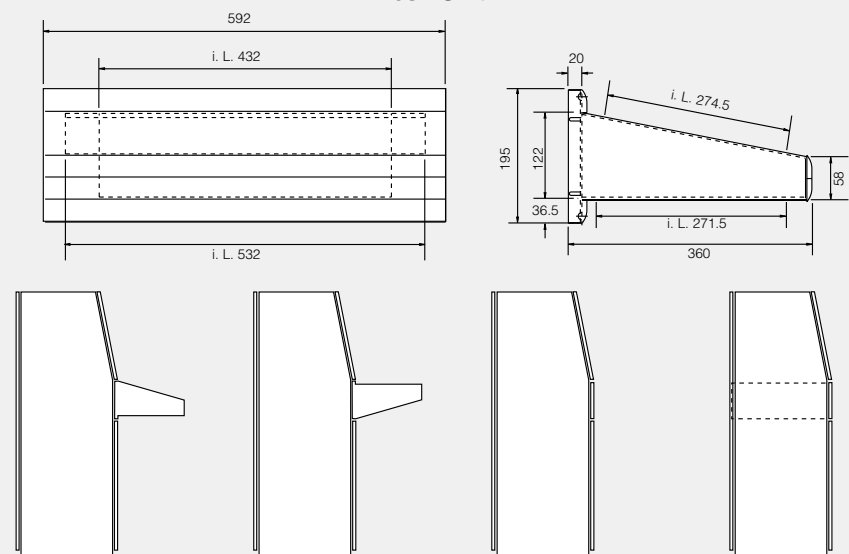


Enclosure				
Height	inches	37.80	37.80	37.80
	mm	960	960	960
Width (W1)	inches	23.62	31.50	39.37
	mm	600	800	1000
Depth	inches	15.75/18.90	15.75/18.90	15.75/18.90
	mm	400/480	400/480	400/480
Part No.		2666600	2668600	2670600
W2		597	797	997
W3		544	744	944
W4		524	724	924
W5		500	700	900
W6		-	-	495
W7		-	-	497
W8		500	700	900
W9		398	598	798
W10		535	735	935
W11		597	797	997
F1		530	730	930
F2		475	675	875
No. doors		1	1	2
Weight	lbs	113.3	137.5	174.9
	kg	51.5	62.5	79.5

**Technical Specifications**  
AP Universal Console Systems



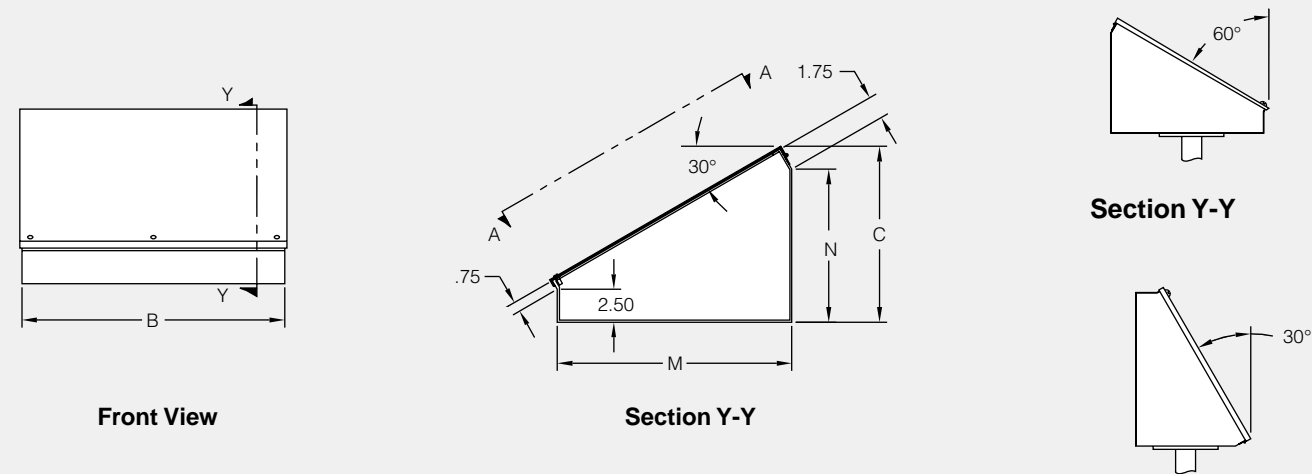
**Desk Unit**



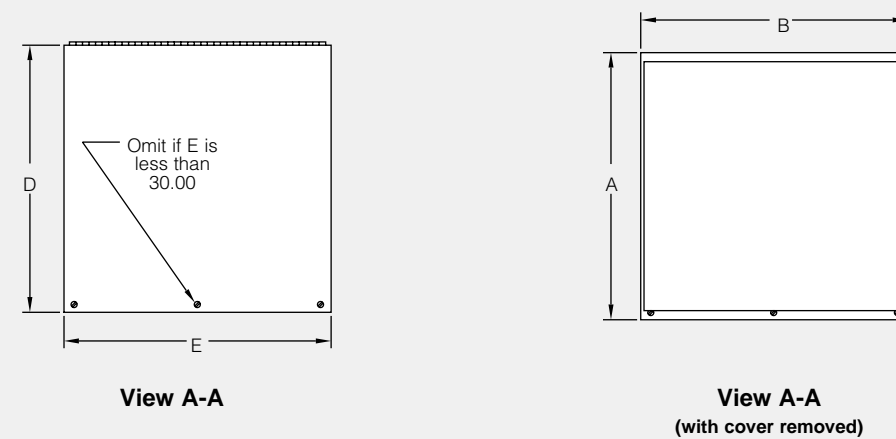
AP 2694 + 2696    AP 2694 + 2696    AP 2694 + MC 4702    AP 2694 + MC 4757

Console		
Part No.	Dimensions H x W x D	Version
2694600	51.18" x 23.62" x 19.69" 1300 x 600 x 500 mm	Top lid, shorted front door

**Technical Specifications**  
Consoles, Pedestals and Bases



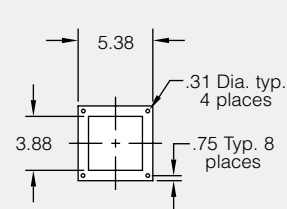
Console can be positioned at either 60° or 30° angle



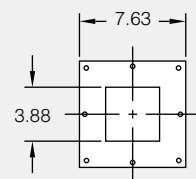
Part No.	Console						
	Outside dimensions (inches)			Cover size		M	N
	H	W	D	D	E		
E 8C8	8.00	8.00	7.09	8.31	8.31	7.44	5.63
E 8C12	8.00	12.00	7.09	8.31	12.31	7.44	5.63
E 8C16	8.00	16.00	7.09	8.31	16.31	7.44	5.63
E 12C12	12.00	12.00	9.09	12.31	12.31	10.91	7.63
E 12C16	12.00	16.00	9.09	12.31	16.31	10.91	7.63
E 12C20	12.00	20.00	9.09	12.31	24.31	10.91	7.63
E 16C20	16.00	20.00	11.29	16.31	70.31	14.38	9.63
E 16C24	16.00	24.00	11.09	16.31	24.31	14.38	9.63



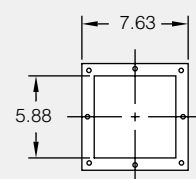
### Technical Specifications Consoles, Pedestals and Bases



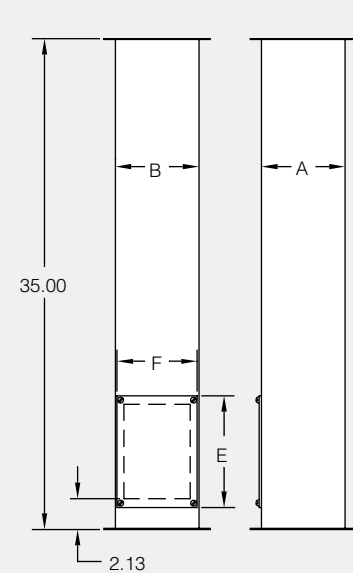
**4x4 Top Column Flange**



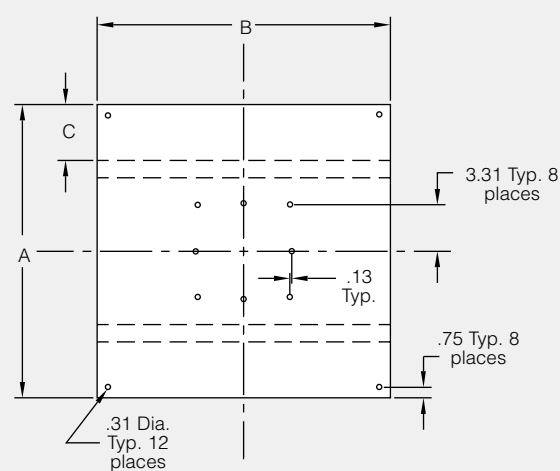
**4x4 Bottom Column Flange**  
See Base For Hole Locations



**6x6 Bottom Column Flange**  
See Base For Hole Locations



**Column**



**Base Top View**

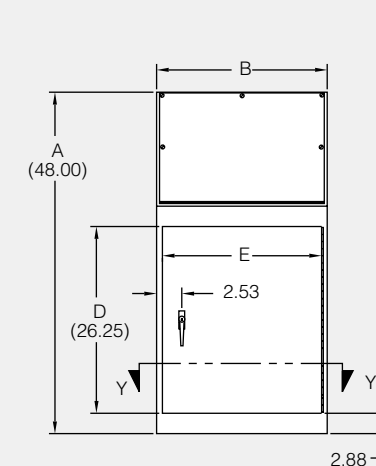


**Base End View**

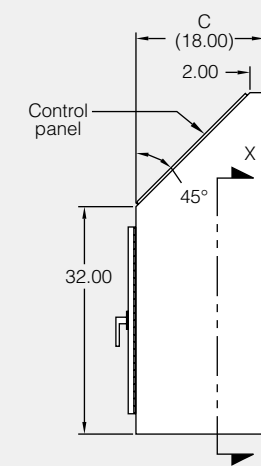
Pedestal				
Part No.	Outside dimensions (inches)		Cover plate	
	A	B	E	F
<b>E 44CCOL</b>	4.00	4.00	7.00	3.75
<b>E 66CCOL</b>	6.00	6.00	7.75	5.75

Base			
Part No.	A	B	Stiffener location
			E
<b>E 18SBASE</b>	18.00	18.00	3.00
<b>E 24SBASE</b>	24.00	24.00	5.00

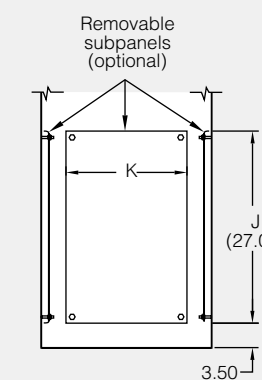
### Technical Specifications Series 9 Operator Enclosures



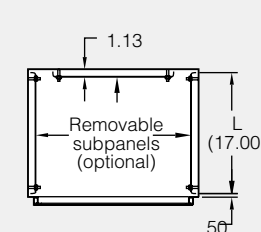
**Front View**



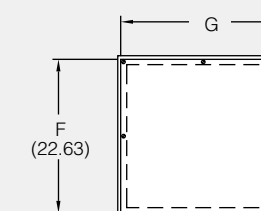
**Side View**



**Section X-X**



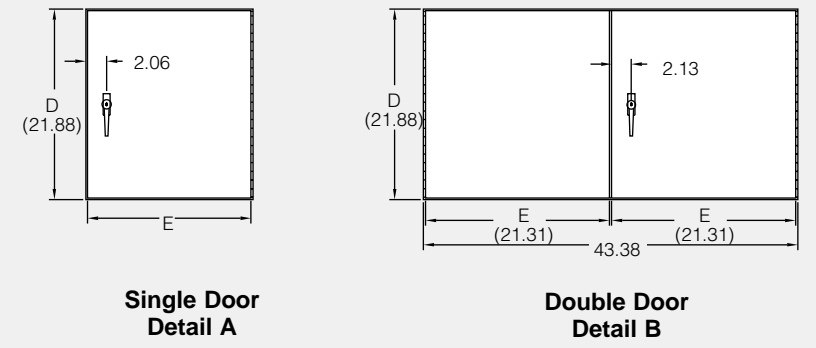
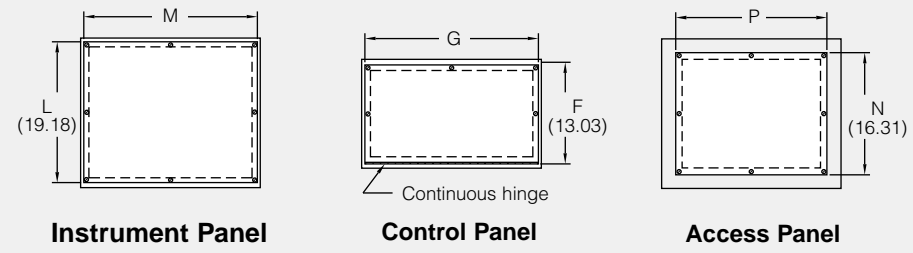
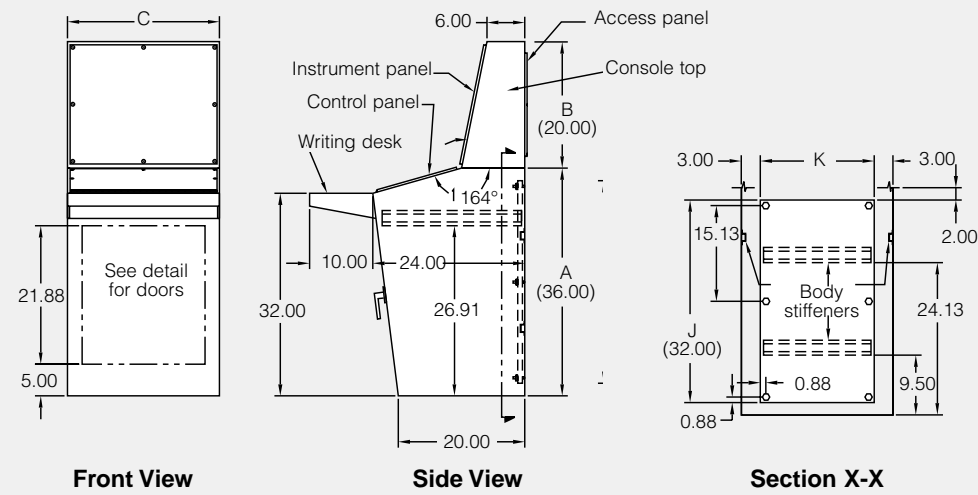
**Section Y-Y**



**Control Panel Detail**

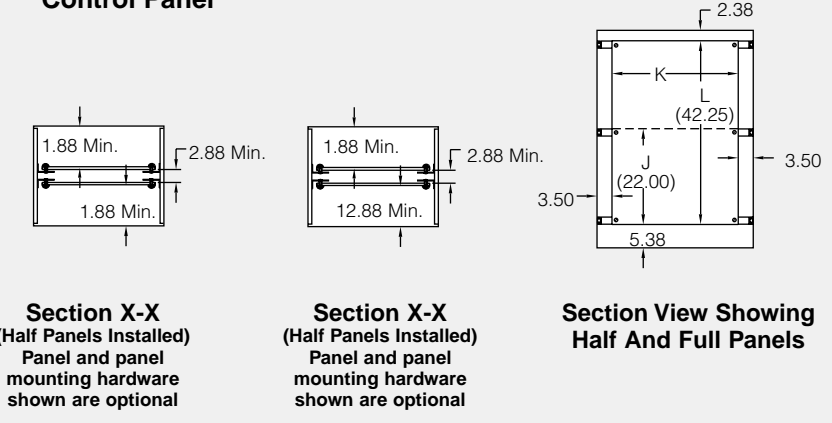
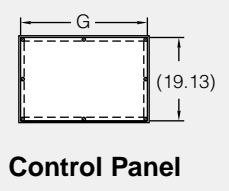
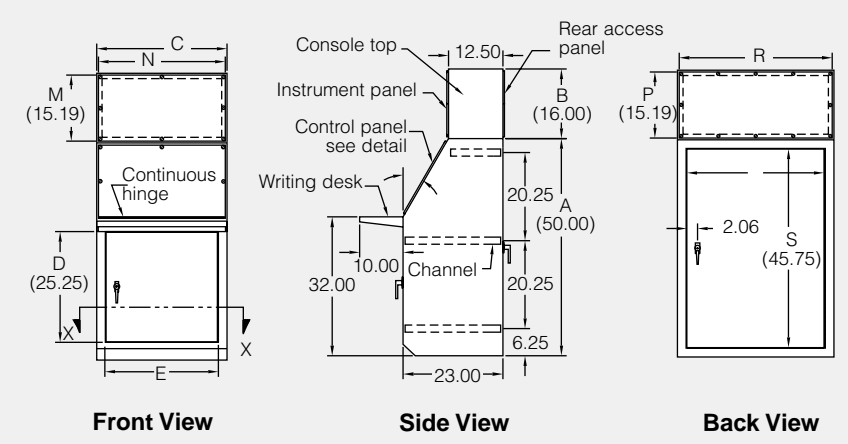
Console														
Part No.	H	W	D	Door size panel		Control panel		Rear mounting panel	Rear mounting panel size		Side mounting	Side mounting panel size		Caster kit
				D	E	F	G		J	F		J	L	
	A	B	C	D	E	F	G	J	F	J	L			
<b>E C924B</b>	48.00	24.00	18.00	26.25	22.38	23.19	23.19	<b>E 30P20</b>	27.00	17.00	<b>E 30P20</b>	27.00	17.00	<b>E C10C</b>
<b>E C936B</b>	48.00	36.00	18.00	26.25	34.38	22.63	35.19	<b>E 30P30</b>	27.00	27.00	<b>E 30P20</b>	27.00	17.00	<b>E C10C</b>

### Technical Specifications Series 12 Operator Enclosures



Console														
Body Catalog No.	Body height		Width	Door size		Control panel		Rear mounting panel size		Top Catalog No.	Instrument panel		Access panel	
	A	B		D	E	F	G	J	K		L	M	N	P
	E C12B	36.00	20.00	36.00	21.88	31.94	13.03	35.19	32.00		30.00	E C12T	19.19	35.19

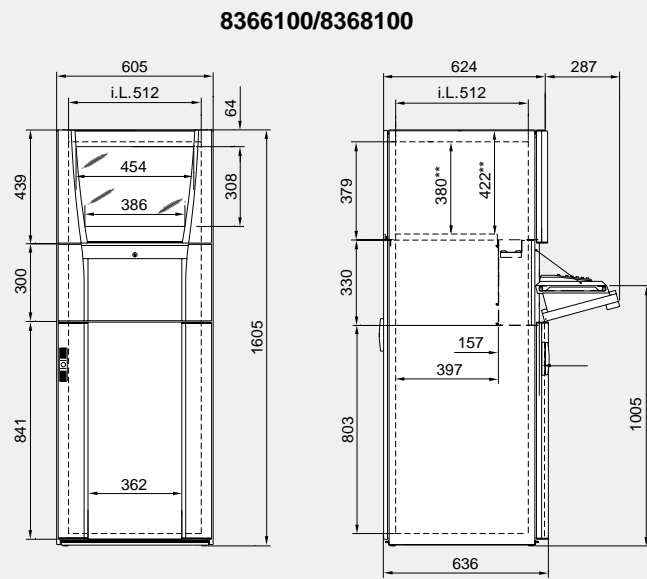
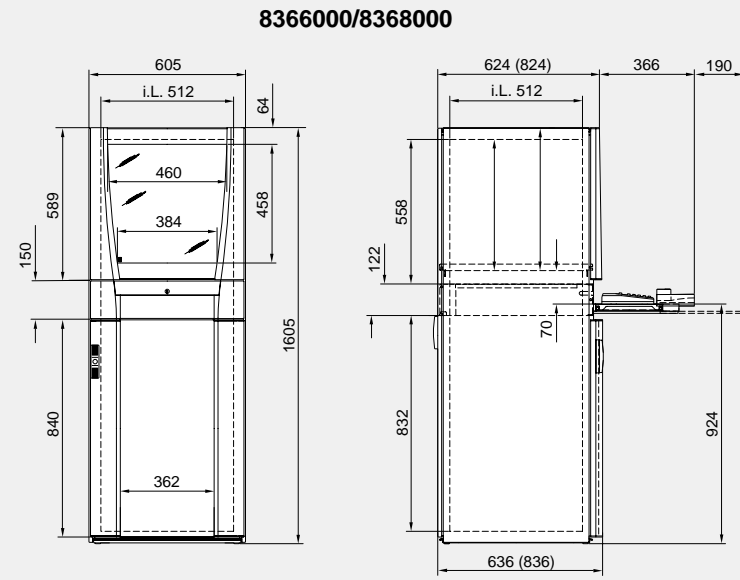
### Technical Specifications Series 14 Operator Enclosures



Console											
Body Part No.	Top Part No.	Body height	Top height	Width	Front door size		Control panel size		Half Mounting Panel Part No.	Half mounting panel size	
					D	E	F	G		J	K
					E C14B	E C14T	50.00	16.00		24.00	25.25
E C1436B	E C1436T	50.00	16.00	36.00	25.25	31.59	19.13	35.19	E C1436P2	22.00	29.00

Console (Continued)											
Full Mounting Panel Part No.	Full mounting panel size		Swingout Mounting Panel Part No.	Swingout mounting panel size		Instrument panel size		Access panel size		Full rear door size	
	L	K		M	N	P	R	S	T		
	E C14P3	42.50		17.00	E C14P1	22.00	18.13	15.19	23.19	15.19	23.19
E C1436P3	42.50	29.00	E C1436P1	22.00	30.13	15.19	35.19	15.19	35.19	45.75	31.59

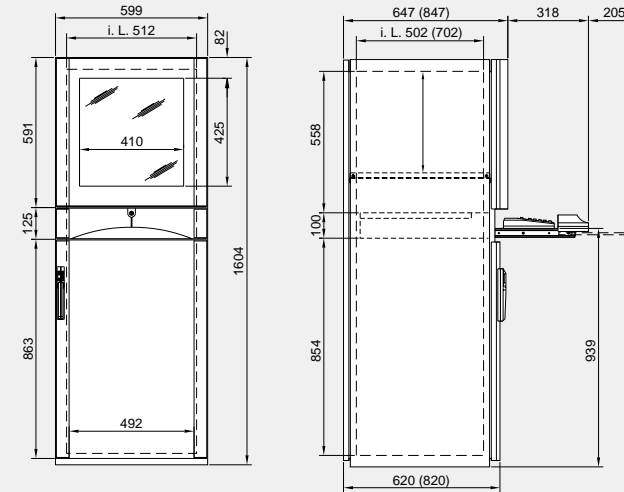
**Technical Specifications**  
TS8 PC Enclosures



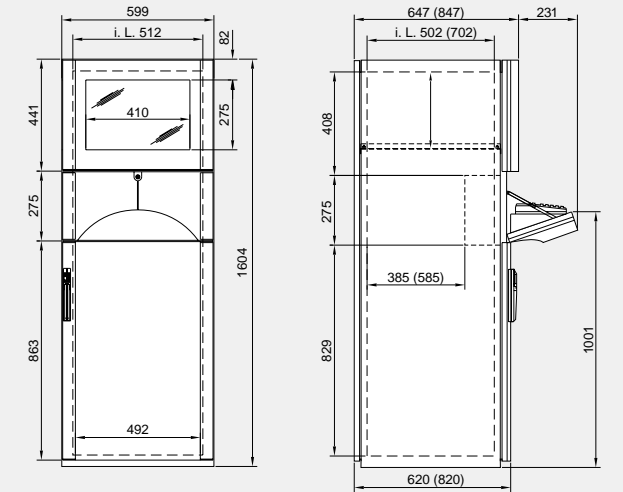
Part No.	Enclosure					
	Exact outside dimensions					
	inches			mm		
H	W	D	H	W	D	
8366000	63	24	25	1600	600	636
8366100	63	24	25	1600	600	636
8368000	63	24	33	1600	600	836
8368100	63	24	33	1600	600	836

**Technical Specifications**  
Standard PC Freestanding Enclosures

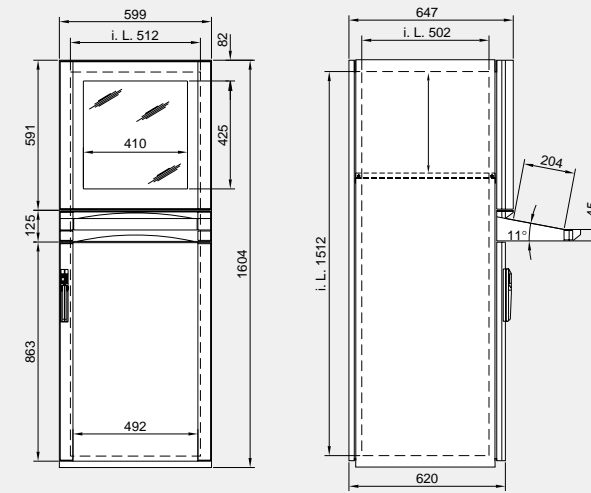
**With Keyboard Drawer**



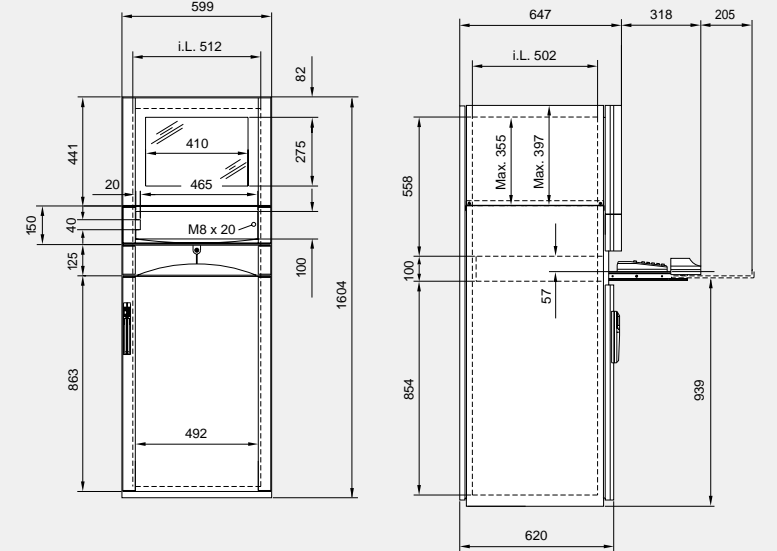
**With Keyboard Shelf**



**With Console**



**With Drawer/Panel**



i.L. = available space  
HU = available installation height (1HU = 1.75")

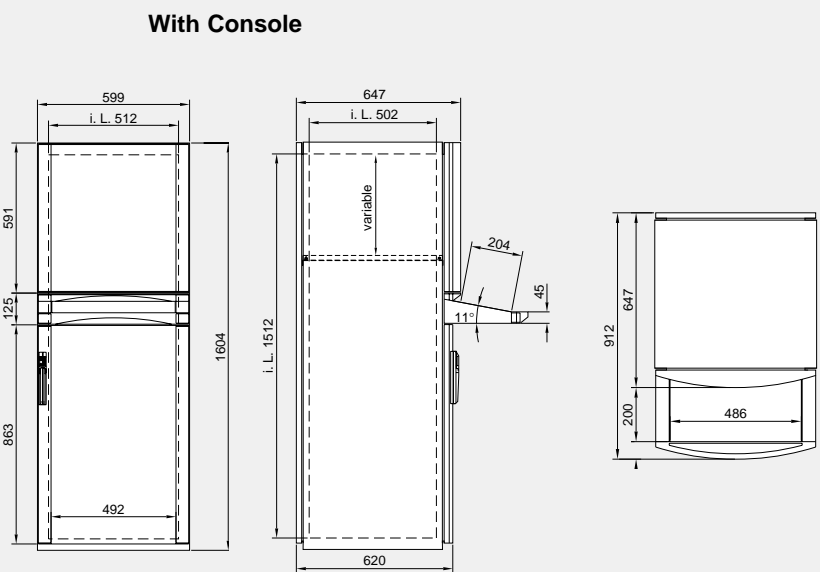
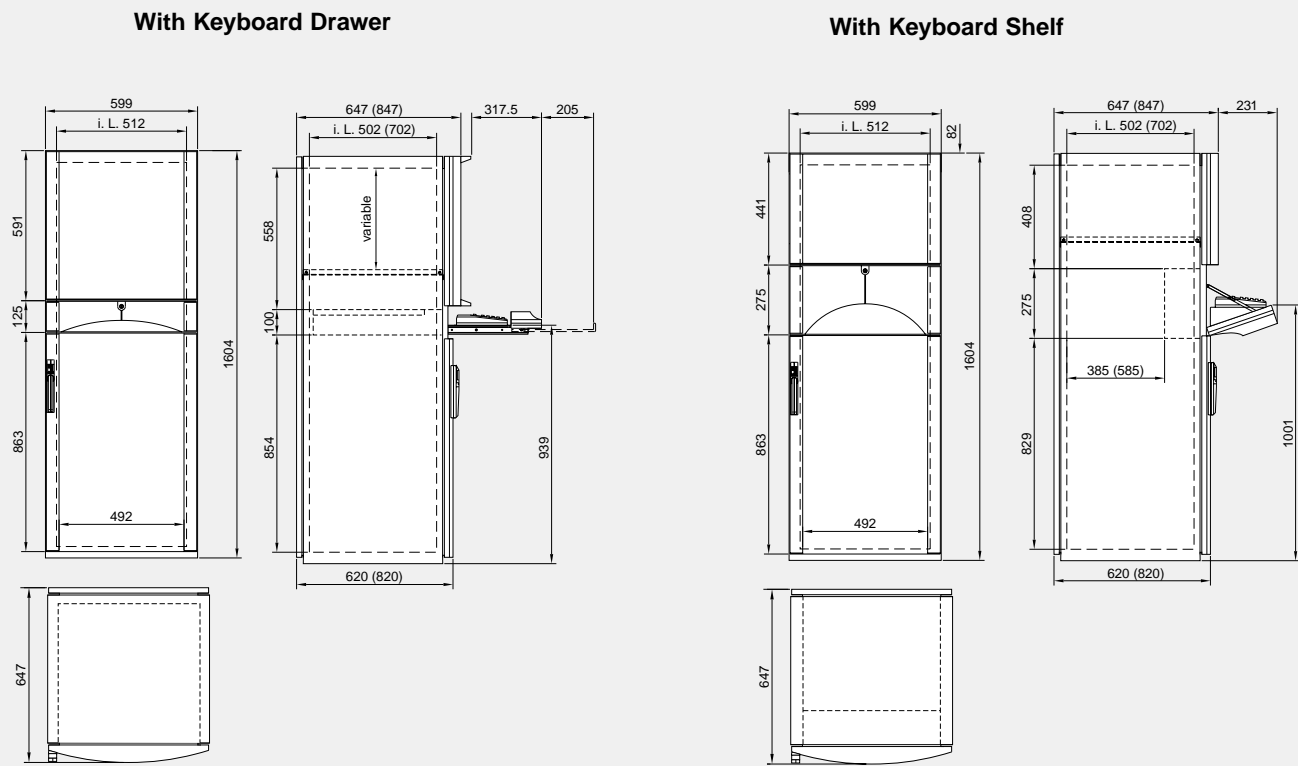
Part No.	Enclosure							
	Front installation	Packs of	With keyboard drawer (including keyboard bracket)	With keyboard shelf	With console	With keyboard drawer (including keyboard bracket)	With keyboard shelf	With drawer/panel
	1	4603703*	4603920	4603704	4609703**	4609920	4603913	
H inches/mm	-	62.99"/1600 mm	62.99"/1600 mm	62.99"/1600 mm	62.99"/1600 mm	62.99"/1600 mm	62.99"/1600 mm	
W inches/mm	-	23.62"/600 mm	23.62"/600 mm	23.62"/600 mm	23.62"/600 mm	23.62"/600 mm	23.62"/600 mm	
D inches/mm	-	25.59"/650 mm	25.59"/650 mm	35.83"/910 mm	33.46"/850 mm	33.46"/850 mm	25.59"/650 mm	

\* Information for PC ValuePack Part Nos. 9968185 and 9968187 as well.

\*\* Information for PC ValuePack Part Nos. 9968186 and 9968188 as well.

### Technical Specifications

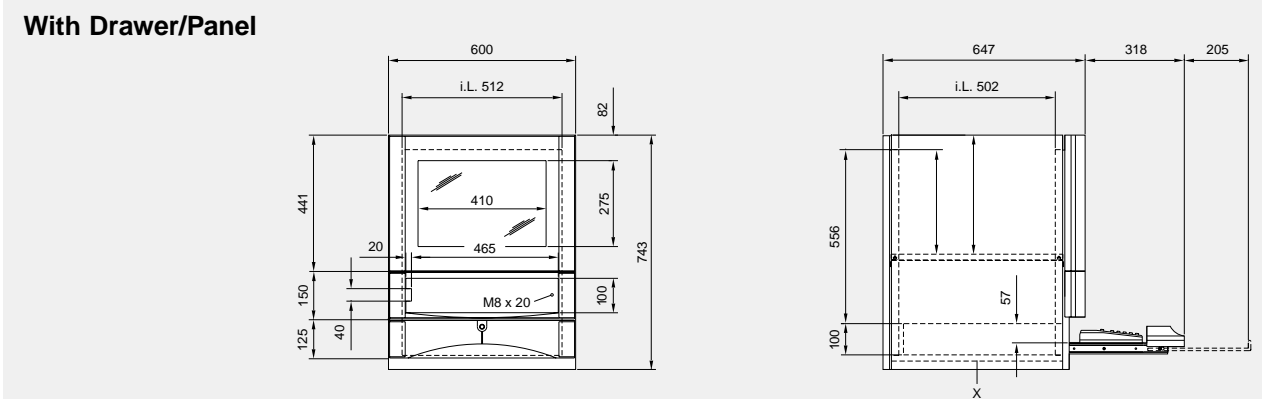
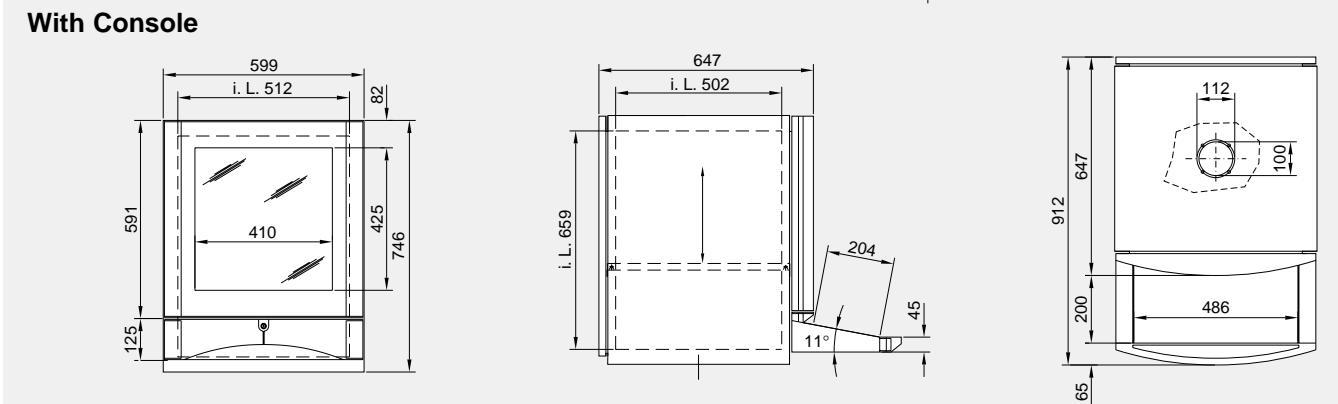
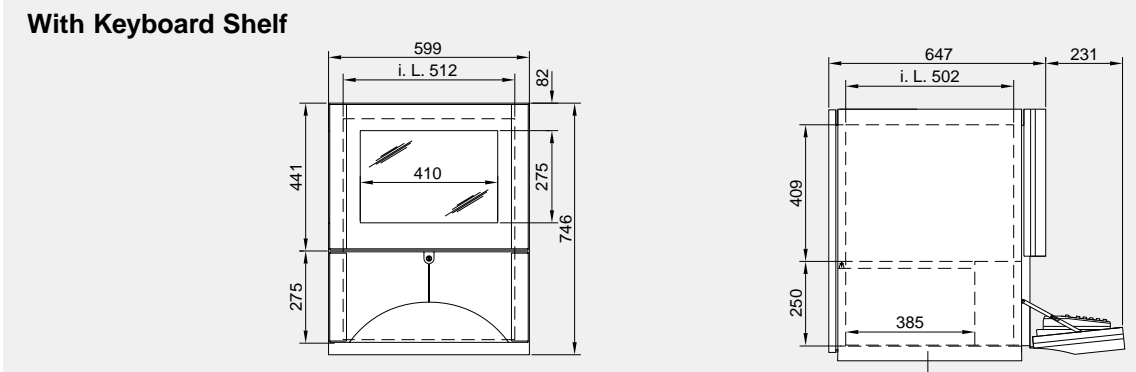
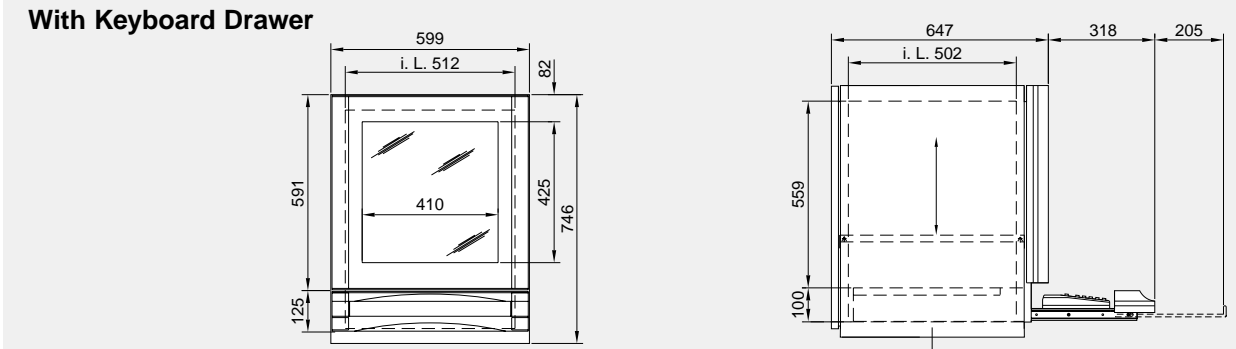
#### Standing PC Freestanding Enclosures



Enclosure			
Front installation	With keyboard drawer	With keyboard shelf	With console
<b>Part No.</b>	<b>4603603</b>	<b>4603820</b>	<b>4603604</b>
H (inches/mm)	63.0/1600	63.0/1600	63.0/1600
W (inches/mm)	23.6/600	23.6/600	23.6/600
D (inches/mm)	25.6/650	25.6/650	25.6/35.8 (650/910)

### Technical Specifications

#### PC Desktop/Pedestal Enclosures



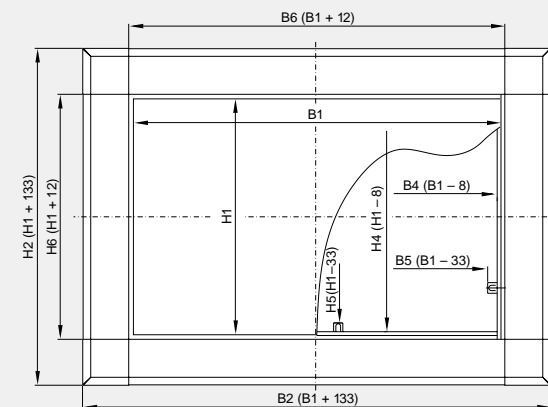
Enclosure					
Front installation	Packs of	With keyboard drawer	With keyboard shelf	With console	With drawer/panel
<b>Part No.</b>	1	<b>4617703</b>	<b>4617920</b>	<b>4617704</b>	<b>4617913</b>
H (inches/mm)	-	29.53/750 mm	29.53/750 mm	29.53/750 mm	29.53/750 mm
W (inches/mm)	-	23.62/600 mm	23.62/600 mm	23.62/600 mm	23.62/600 mm
D (inches/mm)	-	25.59/650 mm	25.59/650 mm	25.59/650 mm	25.59/650 mm



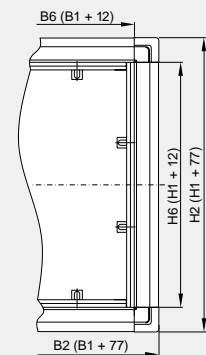
### Technical Specifications

#### VIP Command Panel

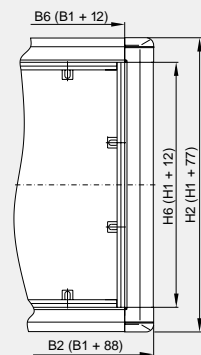
##### Front frame, wide



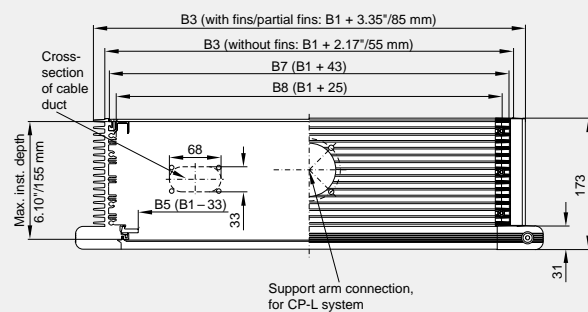
##### Narrow



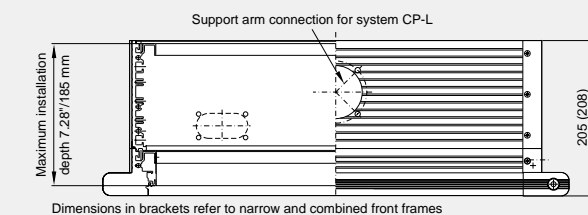
##### Combined



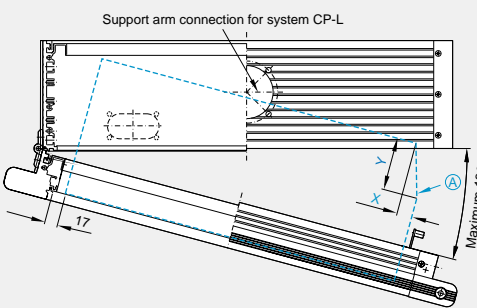
##### 1 Installation depth 6.10"/155 mm, screw-on



##### 2 Installation depth 7.28"/185 mm, screw-on

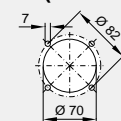


##### 3 Installation depth 7.28"/185 mm, hinged

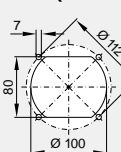


#### Support arm connections

##### CP-L (CP 6500)



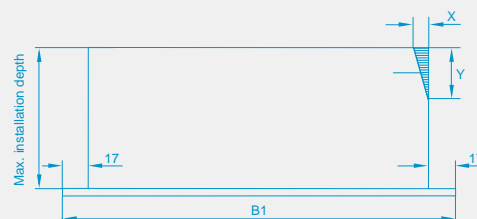
##### CP-XL (CP 6000)



- Height dimensions:  
 H1 = Height of front panel  
 H2 = Overall height  
 H3 = Enclosure height  
 H4 = Clearance height between the enclosure sections  
 H5 = Clearance height between the retaining claws  
 H6 = Clearance height between the front frames  
 H7 = Height of rear panel  
 H8 = Clearance frame, height (H1 + 25)

- Width dimensions:  
 B1 = Width of front panel  
 B2 = Overall width  
 B3 = Housing width  
 B4 = Clearance width between the enclosure sections  
 B5 = Clearance width between the retaining claws of the assembly parts  
 B6 = Clearance width between the front frames  
 B7 = Width of rear panel  
 B8 = Clearance frame, width (H1 + 25)

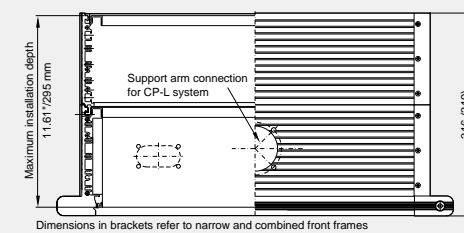
A = Max. installation space for hinged housings



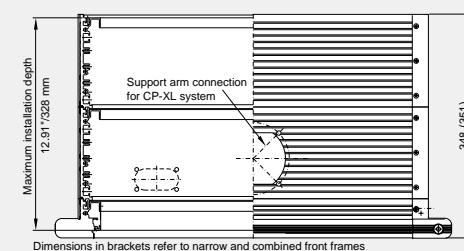
### Technical Specifications

#### VIP Command Panel

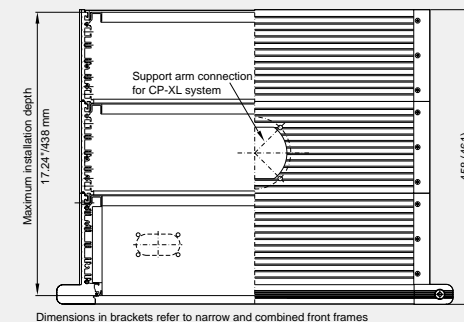
##### 4 Installation depth 11.61"/295 mm, screw-on



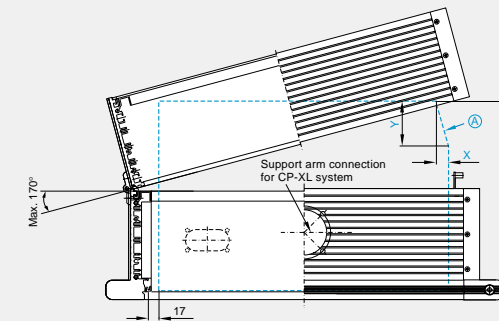
##### 6 Installation depth 12.91"/328 mm, screw-on



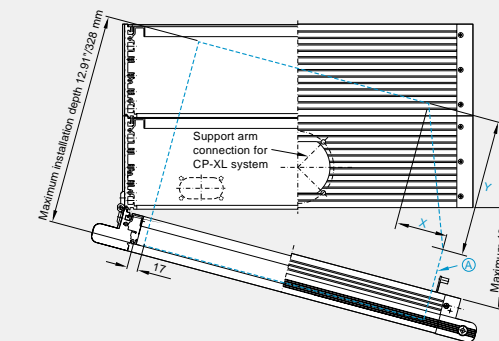
##### 8 Installation depth 17.24"/438 mm, screw-on



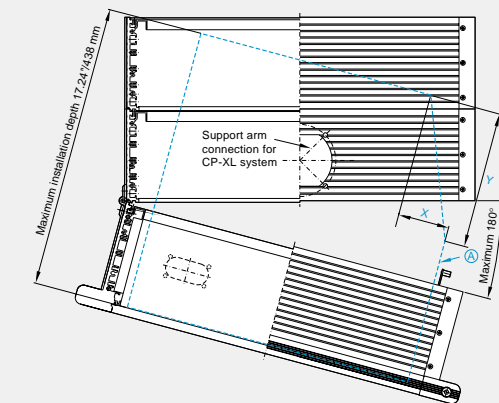
##### 5 Installation depth 11.61"/295 mm, hinged



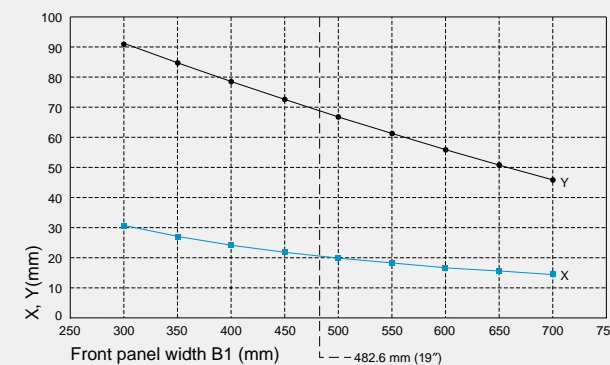
##### 7 Installation depth 12.91"/328 mm, hinged



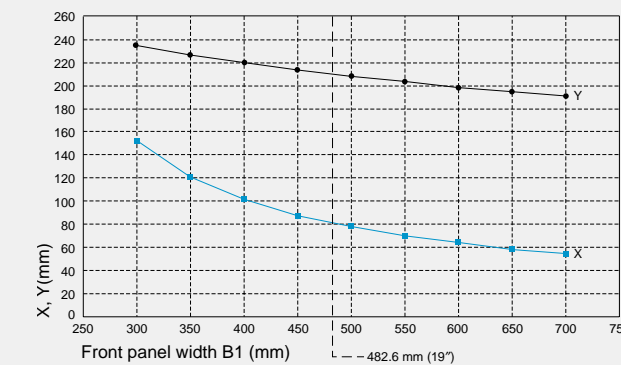
##### 9 Installation depth 17.24"/438 mm, hinged



#### Calculating the swivel mounting space (versions 4 and 6)



#### Calculating the swivel mounting space (versions 7 and 9)

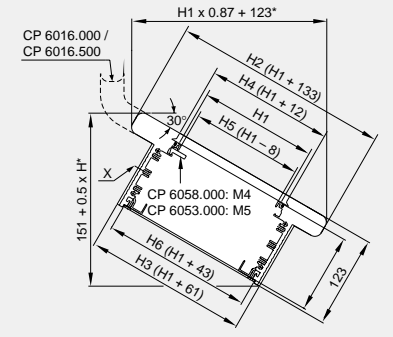
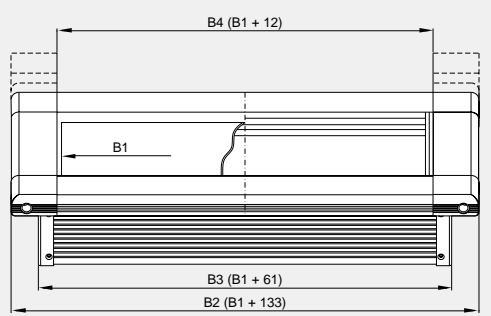


**Technical Specifications**

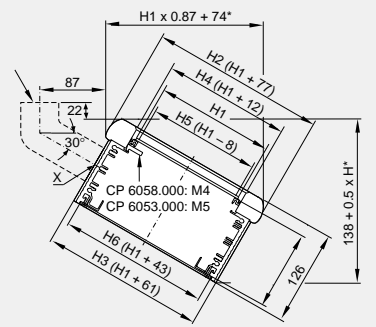
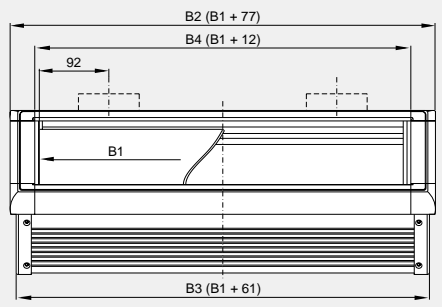
**VIP Keyboard Housing**

**1 Installation depth 105 mm**

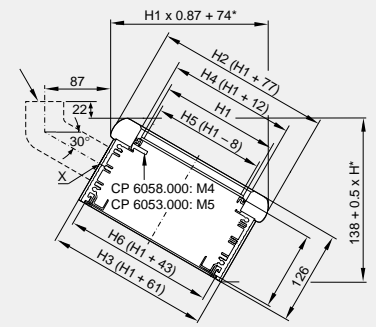
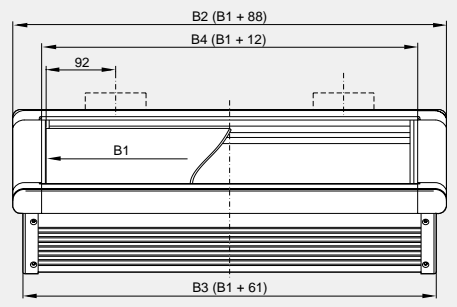
**Front frame, wide**



**Narrow**

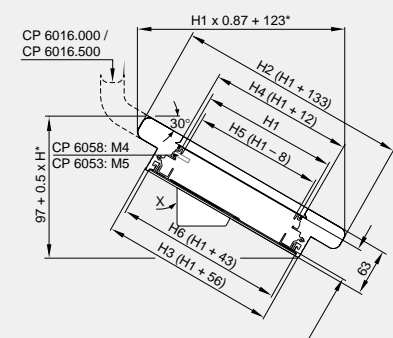
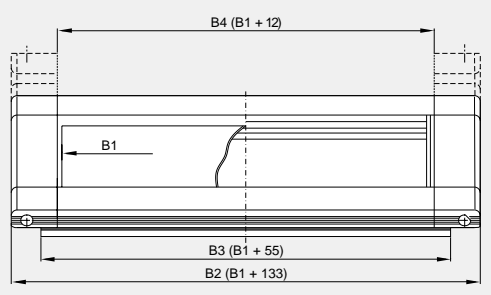


**Combined**



**2 Installation depth 44 mm**

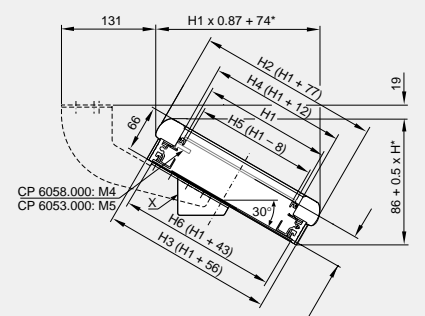
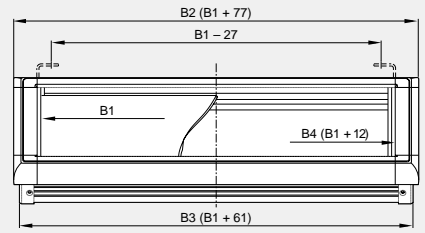
**Front frame, wide**



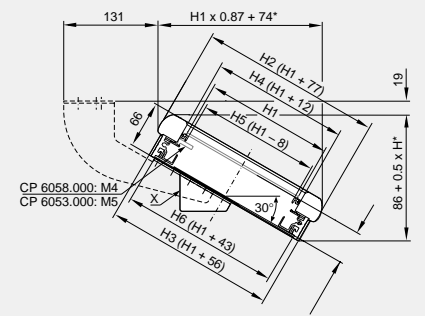
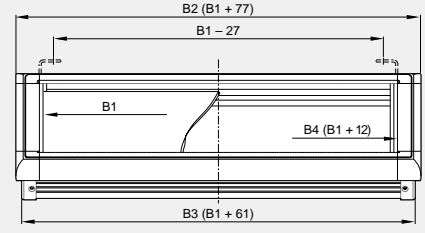
**Technical Specifications**

**VIP Keyboard Housing**

**Narrow**

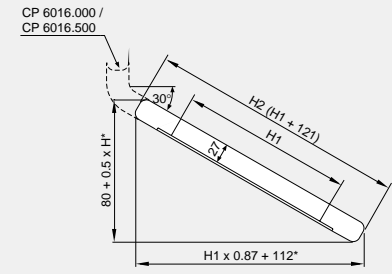
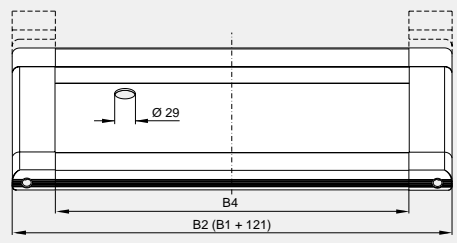


**Combined**



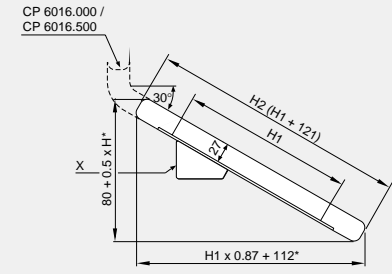
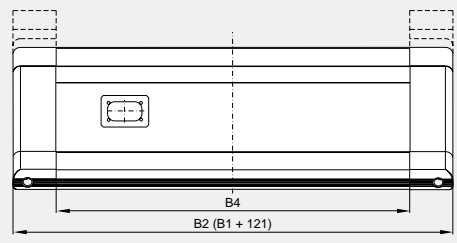
**3 Depth 27 mm**

**Wide front frame, with cable entry**

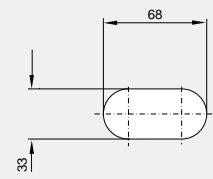


**4 Depth 27 mm**

**Wide front frame, for cable tube, flexible**



**X = Cross-section of cable tube connection**



**Height dimensions:**

- H1 = Height of front panel
- H2 = Overall height
- H3 = Enclosure height
- H4 = Clearance height between the front frames
- H5 = Clearance height between the enclosure sections
- H6 = Height of rear panel

**Width dimensions:**

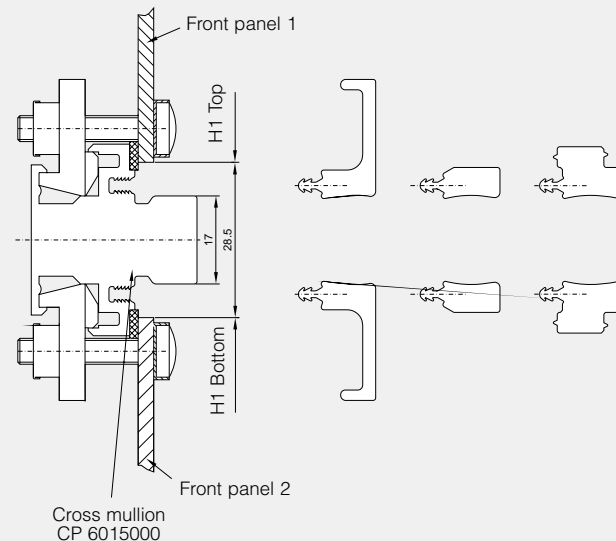
- B1 = Width of front panel
- B2 = Overall width
- B3 = Housing width
- B4 = Clearance width between the front frames

\* applies for angles of 30° to the horizontal

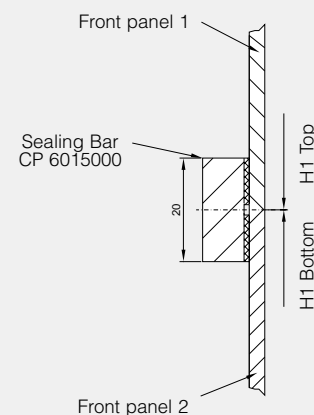
### Technical Specifications

#### VIP Command Panel

##### Cross member

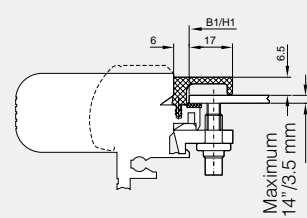


##### Sealing bar

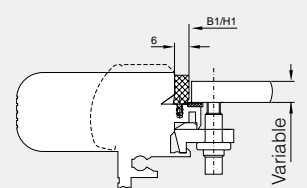


#### Front panel fixed from the inside

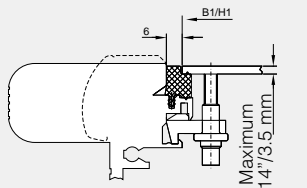
Cover trim  
Lower front panel, covered screws



End trim  
Lower front panel

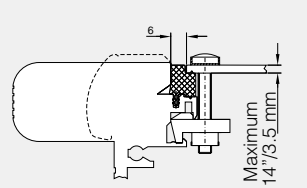
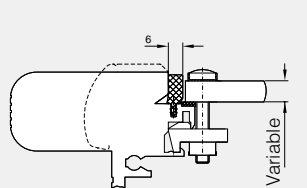
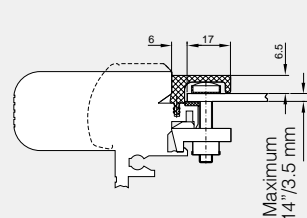


Spacer trim  
Level front panel



Installation kit:  
M5: CP 6053500  
M4: CP 6058500

#### Front panel fixed from the outside

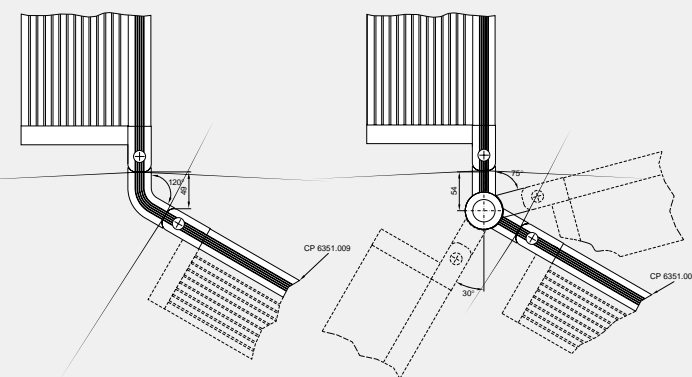


Installation kit:  
M5: CP 6053000  
M4: CP 6058000  
M6: CP 6053000/6058000  
+ EL 2092200  
+ screws M6 x 25

#### Keyboard connection for wide front frame

Frame connector, rigid, for any keyboard housing

Frame connector, adjustable, for any keyboard housing

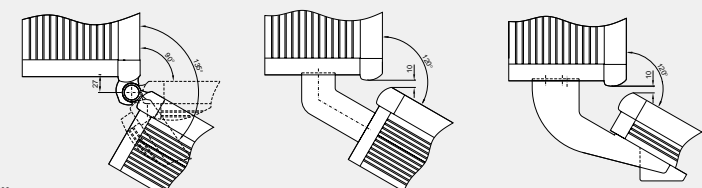


#### Keyboard connection for narrow or combination front frame

Frame connector hinged for keyboard housing: installation depth 4.13"/105 mm + 1.73"/44 mm

Housing tunnel connector keyboard housing: installation depth 4.13"/105 mm

Housing arm connector for keyboard housing: installation depth 1.73"/44 mm



### Technical Specifications

#### VIP Command Panel

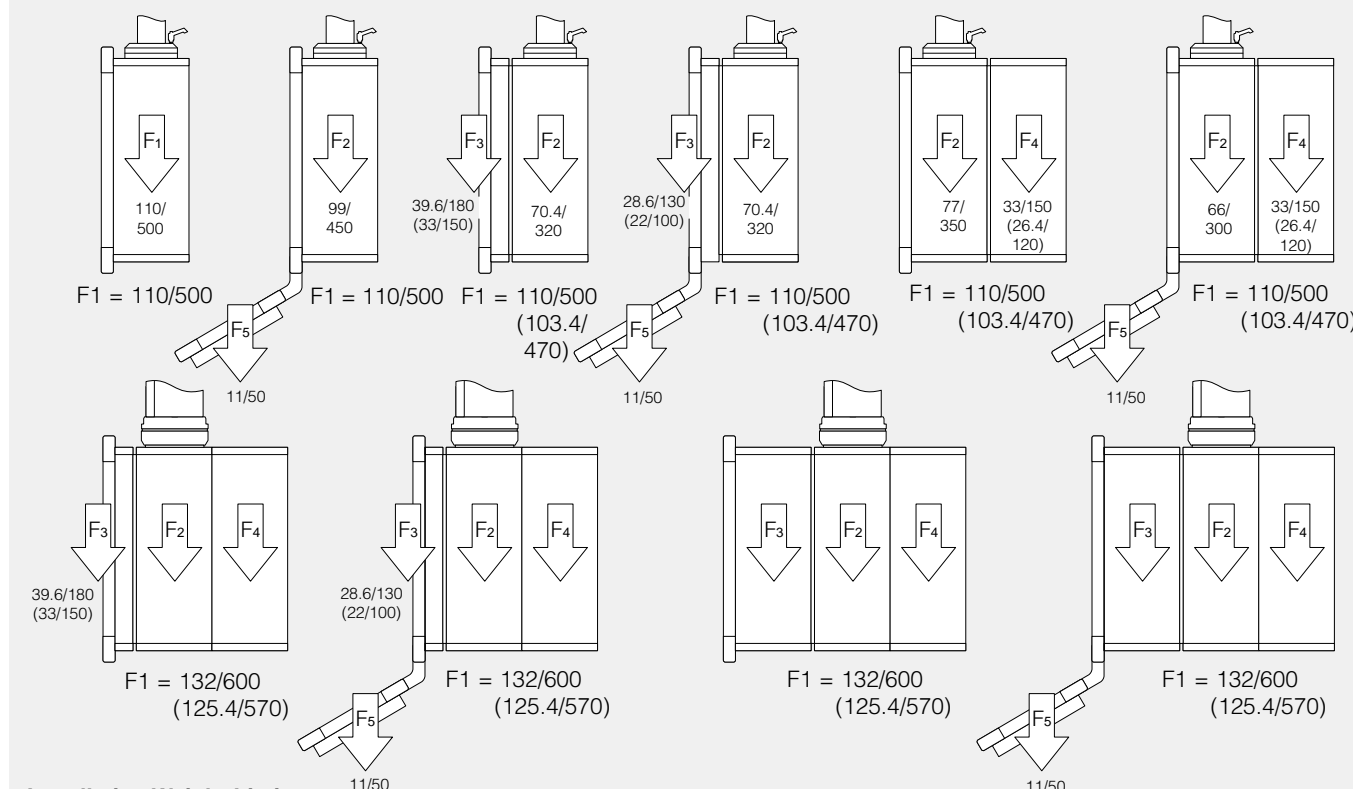
##### Minimum front panel width (B1)

- dependant on
- Installation depth of operator housing
  - Connection of operator/keyboard housing
  - Location of the pendant arm connection

Dimensions in inches/mm		Installation depth of operator housing (see 3.1)				
		6.10/155	7.28/185	11.61/295	12.91/328	17.24/438
Connection to the keyboard housing (see 3.7)	Position of the carrying arm connector (see 3.6)	<b>1</b>	<b>2</b> <b>3</b>	<b>4</b> <b>5</b>	<b>6</b> <b>7</b>	<b>8</b> <b>9</b>
<b>0</b> none	<b>0</b> to <b>3</b> top or bottom	Minimum front panel width				
<b>1</b> Frame connector or <b>4</b> Frame hinged connector	<b>1</b> top	169	265	169	265	265
	<b>2</b> and <b>3</b> bottom	339*	445*	339*	445*	
<b>2</b> Housing cable connector	<b>1</b> top	189	265	189	265	265
	<b>2</b> and <b>3</b> bottom	339	445	339	445	
<b>3</b> Housing arm connector	<b>1</b> top	169	265	169	265	265
	<b>2</b> and <b>3</b> bottom	397*	445*	397*	445*	

\*Lesser front panel widths for asymmetrical pendant arm configurations are possible by request.

#### Installation Components Load Limits In Lbs/N



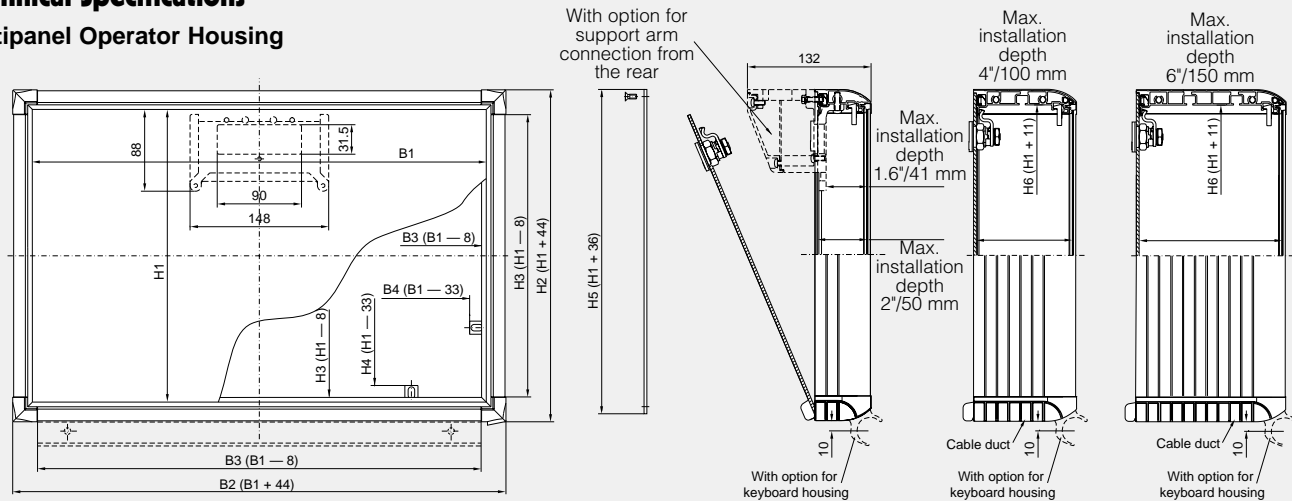
##### Installation Weight Limit:

F<sub>1</sub> = total weight, F<sub>2</sub> = housing (with support arm),  
F<sub>3</sub> = front part, F<sub>4</sub> = rear part, F<sub>5</sub> = keyboard housing

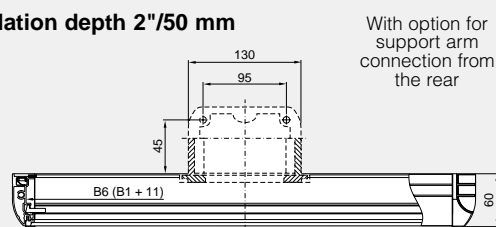
Values in parenthesis are for hinged version (operator housing).  
Housings for higher weights by request only.

### Technical Specifications

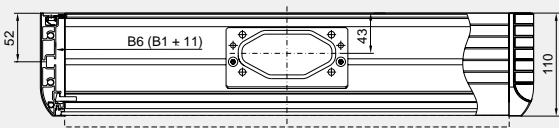
#### Optipanel Operator Housing



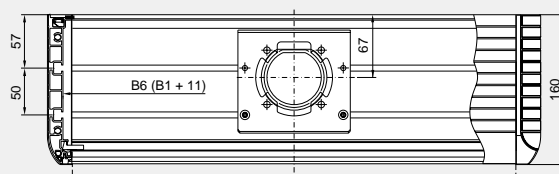
#### Installation depth 2"/50 mm



#### Installation depth 4"/100 mm

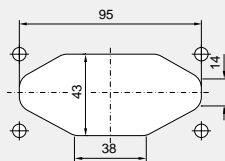


#### Installation depth 6"/150 mm



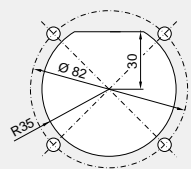
#### Support arm cutouts

CP-L□ for installation depths 4"/100 mm or 6"/150 mm



For mounting of:  
 • CP 6525.1x0  
 • CP 6525.6x0

CP-L□ for installation depth 6"/150 mm



For mounting of:  
 • CP 6525.0x0  
 • CP 6525.5x0  
 • CP 6526.0x0

#### Height dimensions:

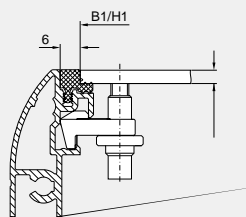
- H1=Height of front panel
- H2=Total height
- H3=Clearance between enclosure profiles
- H4=Clearance between the retaining clamps of installation kit
- H5=Height of rear wall
- H6=Clearance for mounting (trim-to-trim), height

#### Width dimensions:

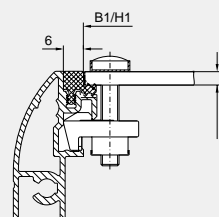
- W1=Width of front panel
- W2=Total width
- W3=Clearance between enclosure profiles
- W4=Clearance between the retaining clamps of installation kit
- W5=Width of rear wall (W1 + 36 mm)
- W6=Clearance for mounting (trim-to-trim), width

#### Front panel, screwed-on

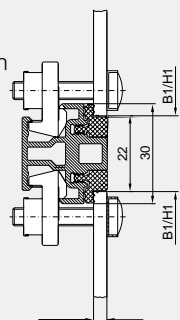
From inside



From outside



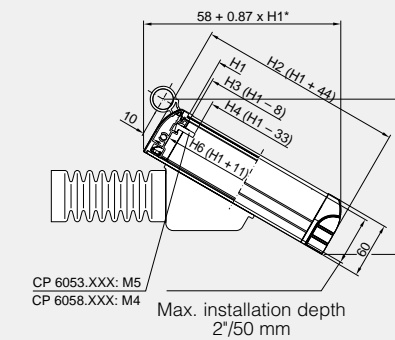
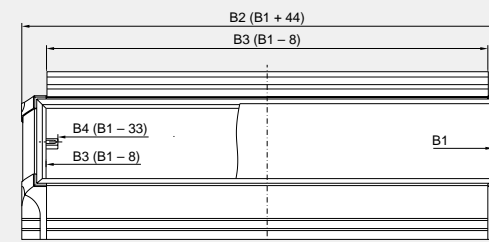
Cross mullion



### Technical Specifications

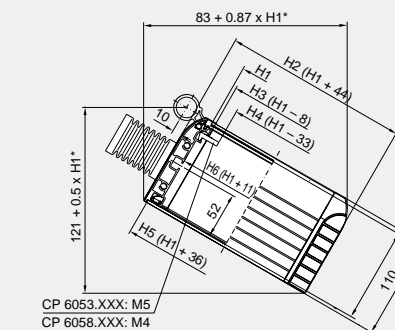
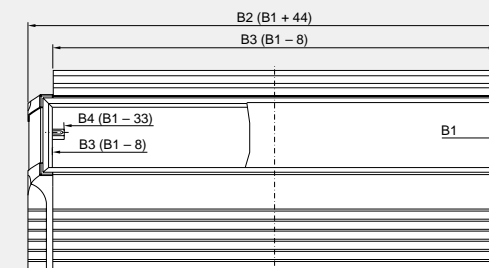
#### Optipanel Keyboard Housing

#### Installation depth 2"/50 mm



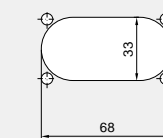
\* valid for 30° tilt to horizontal

#### Installation depth 4"/100 mm



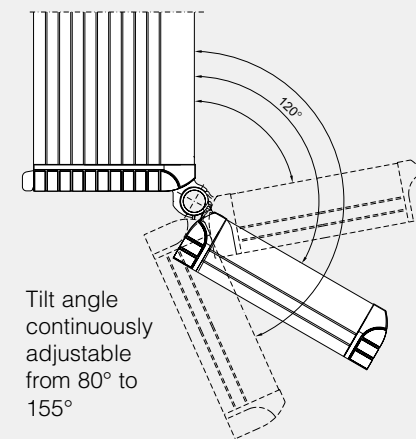
\* valid for 30° tilt to horizontal

#### Cross section cable duct connection



#### Keyboard housing connection

#### Frame hinge connector



#### Minimum width of front panel (W1):

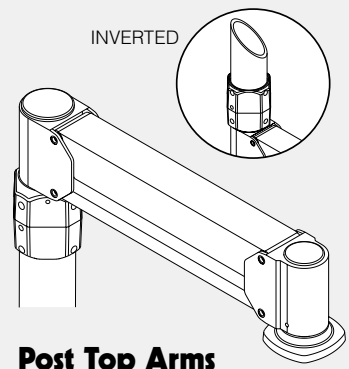
- depending on
- installation depth of operator housing
- with or without keyboard housing
- position of support arm connection

		Installation depth of operator housing		
		2"/50 mm	4"/100 mm	6"/150 mm
Keyboard housing	2.3 Position of support arm connection	Minimum width of front panel (mm)		
	<b>0</b> without	160 (265)	150	150
	<b>1</b> and <b>2</b> with			
	<b>1 4 7 8</b> top or from the rear side			
	<b>2 3 5 6</b> bottom	378*	339*	339*

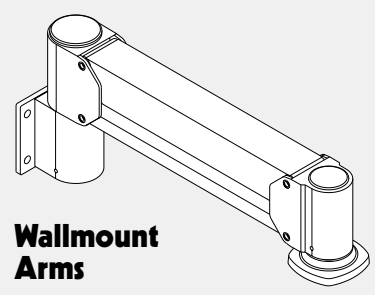
( ) Bracket values:  
 Only for configuration hinged rear wall version **2** and rear connection version **7** and **8**.  
 \* Smaller width of front panels by asymmetric support arm connection is possible on request.



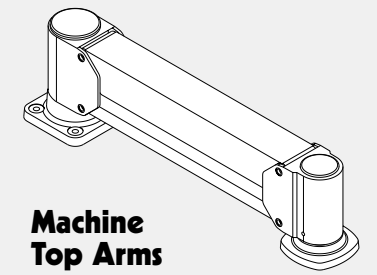
**Technical Specifications**  
CP-Vertical Pendant Arm Systems



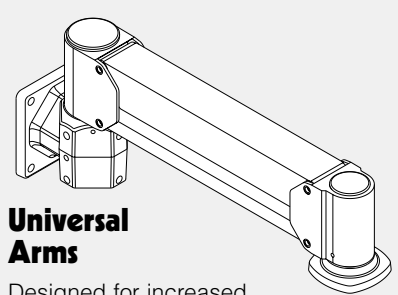
**Post Top Arms**  
Attaches to a plain end 3.5" OD tube or pipe. Cables exit through tube.



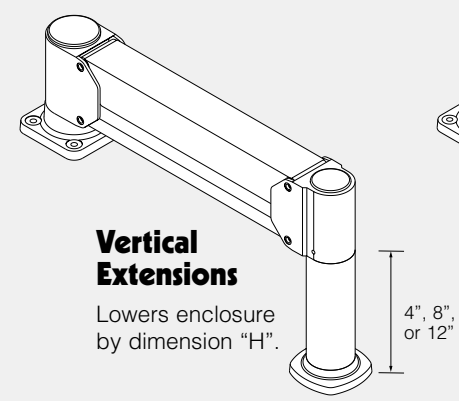
**Wallmount Arms**  
Attaches to a vertical surface with 5.3" H x 6.0" W mounting plate with 4 (.5") Ø hole pattern on 4.75" H x 3.50" W centers. 2.0" Ø hole through center for cable exit. 2.5" NPS threaded opening as alternate cable exit.



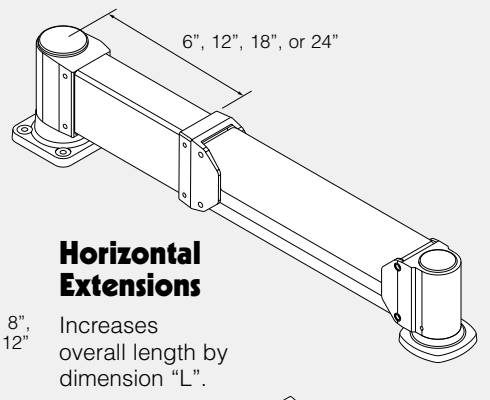
**Machine Top Arms**  
Attaches to horizontal surface with 5" x 5" mounting plate with 4 (.37") Ø hole pattern on 3.54" centers. 1.5" Ø hole through center for cable exit.



**Universal Arms**  
Designed for increased flexibility. Mounting method can be easily configured based on user requirements.



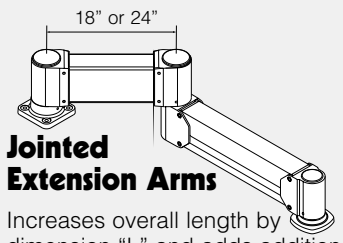
**Vertical Extensions**  
Lowers enclosure by dimension "H".



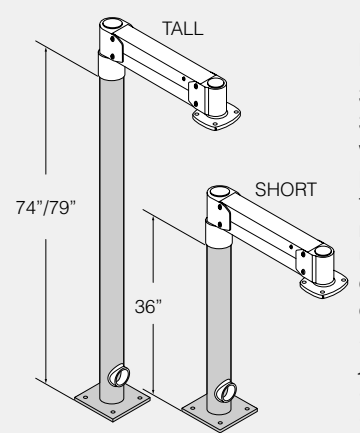
**Horizontal Extensions**  
Increases overall length by dimension "L".



UNIVERSAL AS MACHINE TOP    UNIVERSAL AS WALLMOUNT    UNIVERSAL AS POST TOP



**Jointed Extension Arms**  
Increases overall length by dimension "L" and adds additional swivel joint, providing in-out motion.

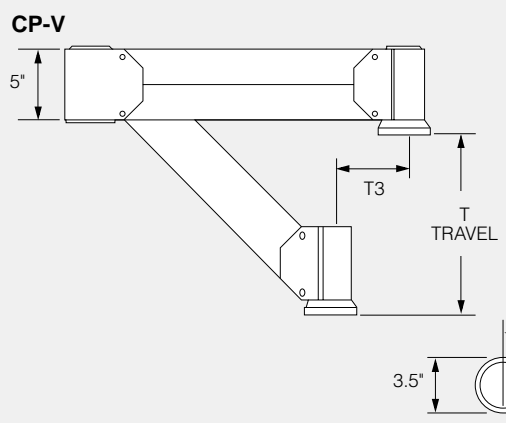


**Floor Posts**  
36", 74", or 79" tall, 3.5" x .25" OD post with square base plate. 1.5" NPT female coupling near base can be used for cable entry. Post can be easily shortened.  
**Note:** When using jointed extension arms, a 79" tall post should be used.

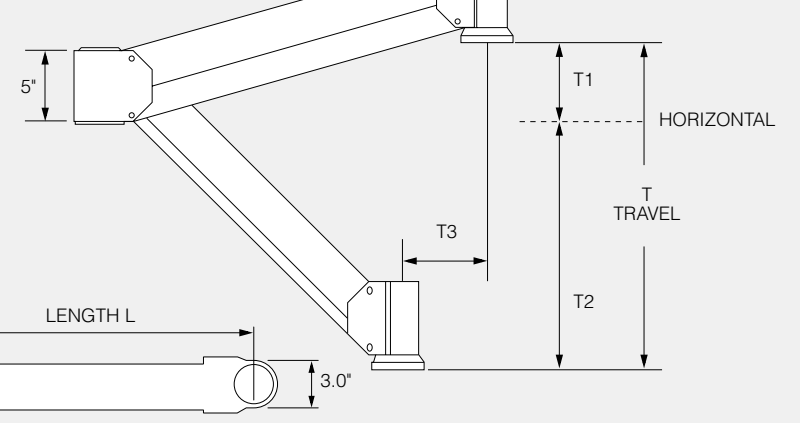
CP-Vertical Pendant Arm Specifications									
Part No.	Description	Max. load	Vertical travel T	T1	T2	T3	Length (L)	Height (H)	Base plate
9967987	Post top / CP-V	100 lbs	13"	-	-	5.6"	22.25"	-	-
9967988	Post top / CP-VL	75 lbs	23"	5.9"	17.1"	6.3"	28"	-	-
9967989	Post top / CP-VXL	50 lbs	30"	7.4"	22.6"	8.7"	35"	-	-
9967993	Wallmount / CP-V	100 lbs	13"	-	-	5.6"	22.25"	-	-
9967994	Wallmount / CP-VL	75 lbs	23"	5.9"	17.1"	6.3"	28"	-	-
9967995	Wallmount / CP-VXL	50 lbs	30"	7.4"	22.6"	8.7"	35"	-	-
9967996	Machine top / CP-V	100 lbs	13"	-	-	5.6"	22.25"	-	-
9967997	Machine top / CP-VL	75 lbs	23"	5.9"	17.1"	6.3"	28"	-	-
9967998	Machine top / CP-VXL	50 lbs	30"	7.4"	22.6"	8.7"	35"	-	-
9967999	Universal mount / CP-V	100 lbs	13"	-	-	5.6"	22.25"	-	-
9968000	Universal mount / CP-VL	75 lbs	23"	5.9"	17.1"	6.3"	28"	-	-
9968001	Universal mount / CP-VXL	50 lbs	30"	7.4"	22.6"	8.7"	35"	-	-

**Technical Specifications**  
CP-Vertical Pendant Arm Systems

**CP-Vertical Travel**

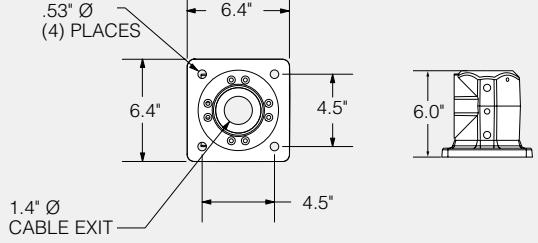


**CP-VL/CP-VXL**

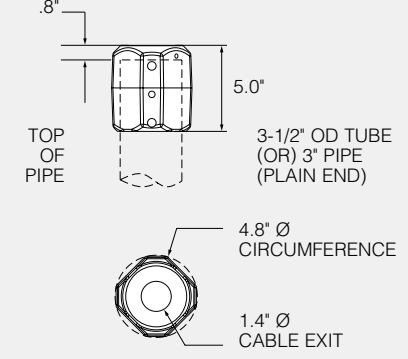


**CP-Vertical Mounting Dimensions**

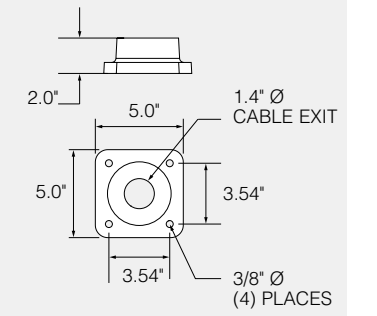
**Machine Top Universal Mounting**



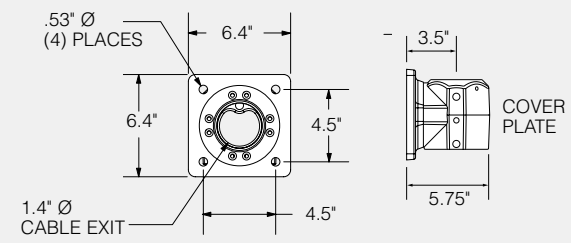
**Post Top Mounting**



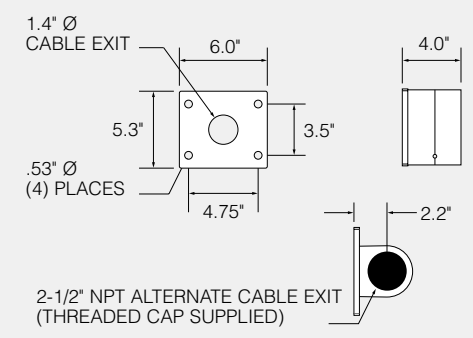
**Machine Top Mounting**



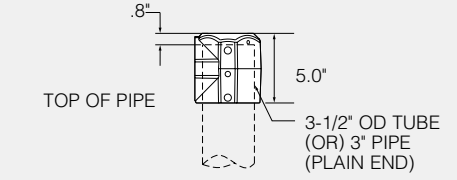
**Wallmount Universal Mounting**



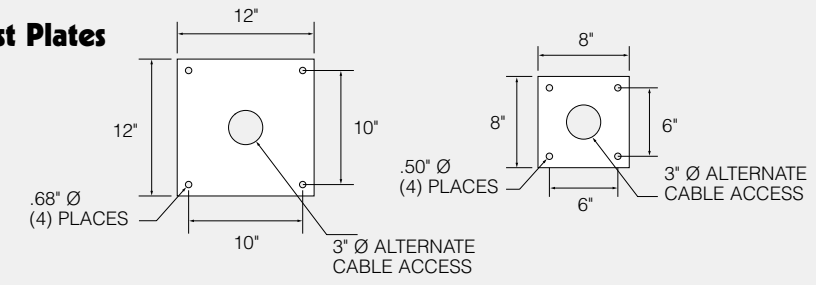
**Wallmount Mounting**



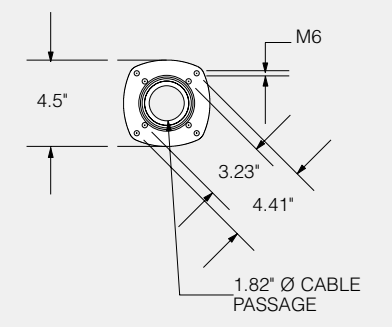
**Post Universal Mounting**



**Floor Post Plates**



**Enclosure Mounting Coupling**

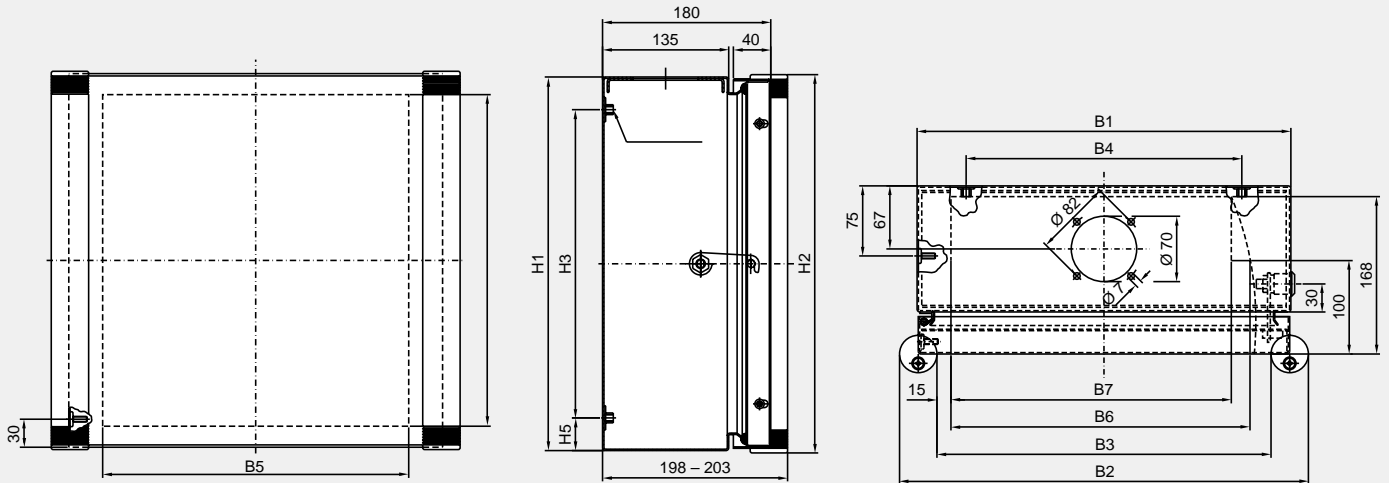




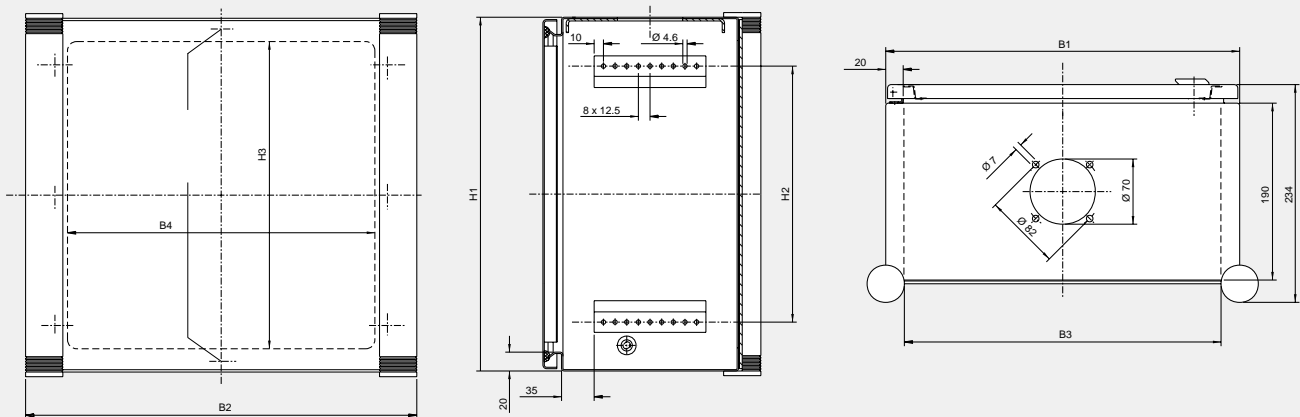
## Technical Specifications

### CP Pendant Arm Enclosures

6534000-6538000



6530200-6533200/6540200



Enclosure												
Part No.	Height dimensions				Width dimensions				Depth	Weight		
	H1	H2	H3	H4	B1	B2	B3	B4		D	lbs	kg
6540200	200	250	52.5	95	300	250	340	260	155	9.9	4.5	
6534000	200	205	122	155	300	338	258	260	180	22.0	10.0	
6535000	300	305	250	255	300	338	258	215	180	26.2	11.9	
6536000	300	305	250	255	400	438	358	295	180	29.1	13.2	
6537000	400	405	350	355	300	338	258	215	180	29.1	13.2	
6538000	400	405	330	355	400	438	358	295	180	30.8	14.0	
6531200	300	250	62.5	175	380	330	420	340	210	22.3	10.1	
6530200	380	330	52.5	275	380	330	420	340	210	18.3	8.3	
6533200	380	330	52.5	275	600	550	640	560	210	32.9	14.9	
6532200	500	450	62.5	375	500	450	540	460	210	28.7	13.0	

Dimensions in millimeters (mm) unless otherwise indicated.

# NONCORROSIVE SOLUTIONS

## NONCORROSIVE SOLUTIONS

Noncorrosive Wallmount Enclosures ..... NON 1-18

Noncorrosive Wireway Products ..... NON 19

Noncorrosive Freestanding Cabinets ... NON 20-23

Noncorrosive FMD Products ..... NON 24

Noncorrosive Operator  
Interface Solutions ..... NON 25-32

Fiberglass Wallmount Enclosures ..... NON 33-42

Fiberglass FMD Products ..... NON 43

Fiberglass Freestanding Products ..... NON 44

Fiberglass Operator  
Interface Solutions ..... NON 45-46

Technical Drawings ..... NON 47-83





# KL/EB Junction Boxes



## KL NEMA Rated Junction Boxes

Rittal KL wallmount enclosures offer a sophisticated stainless steel design with high protection ratings and practical dimensions. They resist corrosion, protect against dust and liquids, as well as promote hygiene.

## EB NEMA Rated Instrument Enclosures

Based on the popular EB sheet steel enclosure design, Rittal's stainless steel EB enclosures meet the tough requirements of the food and chemical industries and off-shore environments. The corrosion resistant design enables protection against chemical influences.



Page WMT 1, 5

## Configuration

- NEMA 1, 4, 4X, 12 protection/IP 66
- UL/CSA/TÜV approvals
- Mounting panel included (optional KL)
- Constructed from Type 304 or 316 stainless steel
- Knife-edge design protects against liquid entry
- Integrated grounding provisions
- Welded stainless steel body
- Screw down cover (KL)
- Foamed-on gaskets ensure perfect seal
- Wide range of accessories
- Off-the-shelf availability

## Technical Specifications

### Material:

- Type 304/316 stainless steel

### KL:

- *Housing:* 18 ga/1.25 mm
- *Cover:* 18 ga/1.25 mm
- *Finish:* housing and cover, brushed finish

### EB:

- *Housing:* 18 ga/1.25 mm
- *Door:* 16 ga/1.5 mm
- *Mounting panel:* hot-dipped galvanized zinc

### Finish:

- *Exterior surfaces:* brushed finish
- *Mounting panel:* Type M

## Protection Ratings

NEMA Type  1  4  4X  12  13

## Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

## Technical Drawings

Pages ..... NON 47-48

KL Enclosure									Mounting Panel				
Part No.	Approximate outside dimensions H"xW"xD"	NEMA rating	Exact outside dimensions						Part No.	Dimensions			
			inches			mm				inches		mm	
			H	W	D	H	W	D		H	W	H	W
<b>Type 304 Stainless Steel</b>													
1521010	6x6x3	1, 4, 4X, 12	5.91	5.91	3.15	150	150	80	1560700	5.31	4.92	135	125
1522010	6x12x3	1, 4, 4X, 12	5.91	11.81	3.15	150	300	80	1561700	11.22	4.92	285	125
1523010	8x8x3	1, 4, 4X, 12	7.87	7.87	3.15	200	200	80	1562700	7.28	6.89	185	175
1524010	8x12x3	1, 4, 4X, 12	7.87	11.81	3.15	200	300	80	1563700	11.22	6.89	285	175
1525010	8x16x5	1, 4, 4X, 12	7.87	15.75	4.72	200	400	120	1564700	15.16	6.89	385	175

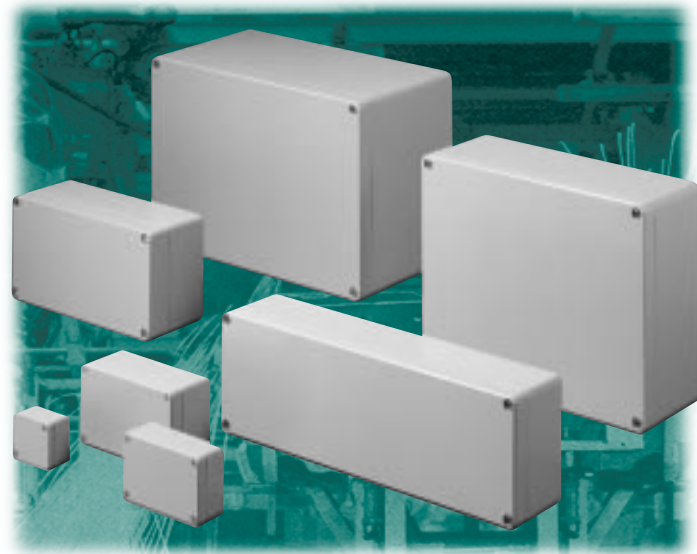
Accessories					
Part No.	Stainless steel wallmounting brackets 5/16" stand-off	Cover hinge	Quick release fastener	Pole mounting kit	Ground strap 7" long/ AWG
<b>Type 304 Stainless Steel</b>					
1521010	1594000	1592000	1593000	2584000	2564000
1522010	1594000	1592000	1593000	2584000	2564000
1523010	1594000	1592000	1593000	2584000	2564000
1524010	1594000	1592000	1593000	2584000	2564000
1525010	1594000	1592000	1593000	2584000	2564000

EB Enclosure									Mounting Panel			
Part No.	Approximate outside dimensions H"xW"xD"	NEMA rating	Exact outside dimensions						Dimensions			
			inches			mm			inches		mm	
			H	W	D	H	W	D	H	W	H	W
<b>Type 304 Stainless Steel</b>												
1597540	14x12x6	1, 4, 4X, 12	13.78	11.81	5.91	350	300	150	13.19	10.83	335	275
1597550	16x14x6	1, 4, 4X, 12	15.75	13.78	5.91	400	350	150	15.16	12.80	385	325
<b>Type 316 Stainless Steel</b>												
1597600	6x6x5	1, 4, 4X, 12	5.91	5.91	4.72	150	150	120	5.31	4.92	135	125
1597620	10x8x6	1, 4, 4X, 12	9.84	7.87	5.91	250	200	150	9.25	6.89	235	175
1597630	12x10x6	1, 4, 4X, 12	11.81	9.84	5.91	300	250	150	11.22	8.86	285	225

Accessories				
Part No.	Stainless steel wallmounting brackets 5/16" stand-off	T-Handle	Pole mounting kit	Ground strap 7" long/ 11AWG
<b>Type 304 Stainless Steel</b>				
1597540	1594000	2572000	2584000	2564000
1597550	1594000	2572000	2584000	2564000
<b>Type 316 Stainless Steel</b>				
1597600	1594000	2572000	2584000	2564000
1597620	1594000	2572000	2584000	2564000
1597630	1594000	2572000	2584000	2564000



# GA Cast Aluminum Enclosures



## Extremely Rugged

With these cast aluminum enclosures, Rittal rounds out its line of compact enclosures and offers an alternative and extremely sturdy solution that will stand up in even the most severe environments.

### Configuration

- Cast aluminum enclosure and cover with neoprene gasket
- Two or four integrated cover screws
- Two screws to fasten installation rails
- One grounding screw

### Technical Specifications

#### Material:

- *Housing and cover:* Cast aluminum
- *Cover gasket:* Neoprene

#### Finish/color:

- *Enclosure/door:* Powder painted RAL 7001, silver grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

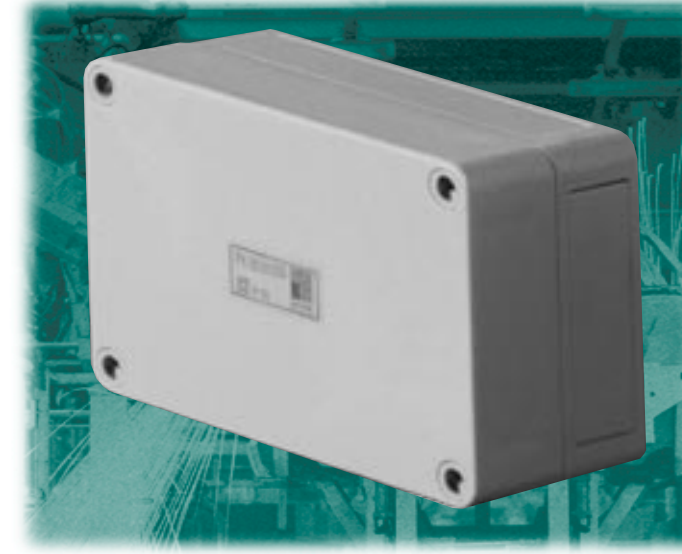
### Technical Drawings

Page ..... **NON 49**

Enclosure							Mounting Panel				
Part No.	Exact outside dimensions						Part No.	Panel size			
	inches			mm				inches		mm	
	H	W	D	H	W	D		H	W	H	W
9104210	3.15	2.95	2.24	80	75	57	-	-	-	-	-
9105210	3.15	4.92	2.24	80	125	57	9105700	4.4	2.7	112	69
9106210	3.15	6.89	2.24	80	175	57	9106700	6.5	2.7	164	69
9108210	4.72	4.80	3.15	120	122	80	9108700	4.3	4.2	109	107
9110210	4.72	8.66	3.54	120	220	90	9110700	8.1	4.2	207	107
9112210	6.30	6.30	3.55	160	160	90	9112700	5.7	5.6	144	142
9113210	6.30	10.24	3.55	160	160	90	9113700	9.6	5.6	244	142
9119210	9.06	12.99	7.09	230	330	180	9118700	12.4	8.4	314	214

Accessories		
Part No.	Wallmount brackets	Hinges
9104210	-	-
9105210	-	9123100
9106210	-	9123100
9108210	9121122	9123000
9110210	9121122	9123000
9112210	9121160	9123000
9113210	9121160	9123000
9119210	9121230	9123000

# PK Polycarbonate Enclosures



## NEMA Rated Polycarbonate Enclosures

Rittal's PK Series of polycarbonate enclosures provide complete corrosion-proof packaging for any application where components require protection against dust and liquids. They can also be used in harsh industrial environments and for controls or electronic equipment. A large selection of practical accessories offers inexpensive solutions for dense wiring or installations in tight places.

### Configuration

- NEMA 1, 4, 4X, 12 protection/IP 66
- High resistance to chemical and mechanical forces
- Foamed-on gasketing
- Cover screws provide for installation of wire/lead seals
- Integrally molded installation holes on bottom of housing
- Optional mounting panels

### Technical Specifications

#### Material:

- *Housing:* fiberglass reinforced polycarbonate
- *Grey cover:* fiberglass reinforced polycarbonate
- *Transparent cover:* polycarbonate
- *Cover screws:* polyamide
- *Hole plugs:* polyethylene

#### Finish:

- RAL 7035 light grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **NON 50**

Enclosure							Mounting Panel						
Part No.	Approximate outside dimensions H"xW"xD"	NEMA rating	Packs of	Exact outside dimensions						Part No. (optional)	Dimensions		
				inches			mm				inches		
				H	W	D	H	W	D		H	W	
9508000	-	3.5 x 5 x 2.25	1, 4, 4X, 12	4	3.70	5.12	2.24	94	130	57	9544000	2.91	4.33
9510000	-	5 x 5 x 3	1, 4, 4X, 12	4	5.12	5.12	2.95	130	130	75	9545000	4.33	4.33
-	9517100*	7 x 7 x 3.5	1, 4, 4X, 12	1	7.09	7.17	3.54	180	182	90	9548000	5.91	5.91
9518000	-	7 x 7 x 4.5	1, 4, 4X, 12	1	7.09	7.17	4.37	180	182	111	9548000	5.91	5.91
9520000	-	7 x 10 x 3.5	1, 4, 4X, 12	1	7.09	10.00	3.54	180	254	90	9549000	5.91	8.60
9521000	9521100*	7 x 10 x 4.5	1, 4, 4X, 12	1	7.09	10.00	4.37	180	254	111	9549000	5.91	8.60
9523000	-	10 x 14 x 4.5	1, 4, 4X, 12	1	10.00	14.17	4.37	254	360	111	9550000	8.66	13.03

\* File 86711

Accessories				
Part No.	Wallmounting brackets	Hinges	Turn-lock fastener	
			Grey Cover	Transparent Cover
9508000	-	9583000	9580000	9582000
9510000	-	9583000	9580000	9582000
-	9517100	9583000	9581000	9582000
9518000	-	9583000	9581000	9582000
9520000	-	9583000	9581000	9582000
9521000	9521100	9583000	9581000	9582000
9523000	-	9583000	9581000	9582000



# Continuous Hinge Cover Enclosures



## Stainless Steel Junction Boxes

These NEMA rated stainless steel junction boxes offer perfect protection for delicate electrical and electronic equipment and are designed primarily for indoor use. They are ideal for pilot devices, such as limit switches, foot switches, pushbuttons, selector switches, pilot lights, etc., and protect such equipment against dirt, dust, external condensation, and spraying of water, oil or coolant.



# Continuous Hinge Cover Enclosures



## Aluminum Junction Boxes

These NEMA rated, light-weight aluminum junction boxes offer perfect protection for delicate electrical and electronic equipment in areas where corrosion problems exist. They are ideal for pilot devices, such as limit switches, foot switches, pushbuttons, selector switches, pilot lights, etc., and protect such equipment against dirt, dust, and spraying of water, oil or coolant.



### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous stainless steel hinges
- Door removed by pulling steel hinge pin
- Stainless steel cover clamps and screws
- External mounting brackets
- Mounting panel provisions installed (except E 404CHSS)

### Technical Specifications

#### Material:

- Enclosure/door: 14 gauge Type 304 stainless steel

#### Finish:

- Enclosure/door: # 3 brushed finish
- Optional stainless steel mounting panels: unpainted
- Optional carbon steel mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 51

### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous aluminum hinge with removable pin
- Stainless steel captive clamps and screws
- External mounting brackets
- Mounting panel provisions installed

### Technical Specifications

#### Material:

- Enclosure/door: .080 aluminum Type 5052 H-32

#### Finish:

- Enclosure/door: brushed finish
- Optional aluminum mounting panels: unpainted
- Optional carbon steel mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 52

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 404CHSS	4.00	4.00	3.00	-	-	-	-
E 606CHSS	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 1008CHSS	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 1210CHSS	12.00	10.00	5.00	E 12P10	10.88	8.88	4.50
E 8066CHSS	8.00	6.00	6.00	E 8P6	6.88	4.88	5.50
E 10086CHSS	10.00	8.00	6.00	E 10P8	8.88	6.88	5.50
E 1412CHSS	14.00	12.00	6.00	E 14P12	12.88	10.88	5.50
E 16148CHSS	16.00	14.00	8.00	E 16P14	14.88	12.88	7.50

Accessories			
Part No.	Terminal block kit	Terminal rails	Window kit
E 404CHSS	-	-	-
E 606CHSS	-	-	-
E 1008CHSS	E 8JTMA	E 10JS	E PWK53NFSS
E 1210CHSS	E 10JTMA	E 12JS	E PWK53NFSS
E 8066CHSS	E 6JTMA	E 8JS	E PWK53NFSS
E 10086CHSS	E 8JTMA	E 10JS	E PWK53NFSS
E 1412CHSS	E 12JTMA	E 14JS	E PEK95NFSS
E 16148CHSS	E 14JTMA	E 16JS	E PWK95NFSS

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 606CHAL	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 8064CHAL	8.00	6.00	4.00	E 8P6	6.88	4.88	3.50
E 1008CHAL	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 12106CHAL	12.00	10.00	6.00	E 12P10	10.88	8.88	5.50
E 1412CHAL	14.00	12.00	6.00	E 14P12	12.88	10.88	5.50
E 1614CHAL	16.00	14.00	6.00	E 16P14	14.88	12.88	5.50

Accessories			
Part No.	Terminal block kit	Terminal rails	Window kit
E 606CHAL	-	-	-
E 8064CHAL	E 6JTMA	E 8JS	-
E 1008CHAL	E 8JTMA	E 10JS	E PWK53NFSS
E 12106CHAL	E 10JTMAXD	E 12JS	E PWK53NFSS
E 1412CHAL	E 12JTMA	E 14JS	E PWK95NFSS
E 1614CHAL	E 14JTMA	E 16JS	E PWK95NFSS

# Continuous Hinge Cover Boxes



## NEMA 4X Stainless Steel Enclosures

These NEMA rated stainless steel junction boxes offer perfect protection for delicate electrical and electronic equipment. They meet the tough requirements of the chemical and food industries and off-shore environments. Their corrosion resistant design offers protection against chemical influences.

They can be used inside or outside to protect installed equipment against splashing water, seepage of water, falling or hose directed water, severe external condensation and spraying of water, oil or coolants.



### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous steel hinge
- Door removed by pulling steel hinge pin
- Stainless steel captive clamps and screws
- External mounting brackets
- Mounting panel provisions installed (except E 404CHNFSS and E 404CHNFSS6)

### Technical Specifications

#### Material:

- Enclosure/door: 14 gauge Type 304 or Type 316 stainless steel (see table)

#### Finish:

- Enclosure/door: # 3 brushed finish
- Optional stainless steel mounting panels: unpainted
- Optional carbon steel mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 53

Enclosure				Mounting Panel				
Part No. 304 SS	Part No. 316 SS	Outside dimensions (inches)			Part No.	Panel size		Usable depth
		H	W	D		H	W	
E 404CHNFSS	E 404CHNFSS6	4.00	4.00	3.00	-	-	-	-
E 604CHNFSS	E 604CHNFSS6	6.00	4.00	3.00	E 6P4	4.88	2.88	2.50
E 806CHNFSS	-	8.00	6.00	3.50	E 8P6	6.88	4.88	3.00
E 6044CHNFSS	E 6044CHNFSS6	6.00	4.00	4.00	E 6P4	4.88	2.88	3.50
E 606CHNFSS	E 606CHNFSS6	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 8064CHNFSS	E 8064CHNFSS6	8.00	6.00	4.00	E 8P6	6.88	4.88	3.50
E 1008CHNFSS	E 1008CHNFSS6	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 1210CHNFSS	-	12.00	10.00	5.00	E 12P10	10.88	8.88	4.50
E 10086CHNFSS	-	10.00	8.00	6.00	E 10P8	8.88	6.88	5.50
E 12106CHNFSS	E 12106CHNFSS6	12.00	10.00	6.00	E 12P10	10.88	8.88	5.50
E 1212CHNFSS	E 1212CHNFSS6	12.00	12.00	6.00	E 12P12	10.88	10.88	5.50
E 1412CHNFSS	-	14.00	12.00	6.00	E 14P12	12.88	10.88	5.50
E 1614CHNFSS	E 1614CHNFSS6	16.00	14.00	6.00	E 16P14	14.88	12.88	5.50

Accessories					
Part No. 304 SS	Part No. 316 SS	Terminal block kit	Terminal rails	Window kit	
E 404CHNFSS	E 404CHNFSS6	-	-	-	
E 604CHNFSS	E 604CHNFSS6	-	-	-	
E 806CHNFSS	-	E 6JTMA	E 8JS	-	
E 6044CHNFSS	E 6044CHNFSS6	-	-	-	
E 606CHNFSS	E 606CHNFSS6	-	-	-	
E 8064CHNFSS	E 8064CHNFSS6	E 6JTMA	E 8JS	-	
E 1008CHNFSS	E 1008CHNFSS6	E 8JTMA	E 10JS	E PWK53NFSS	
E 1210CHNFSS	-	E 10JTMAXD	E 12JS	E PWK53NFSS	
E 10086CHNFSS	-	E 8JTMA	E 10JS	E PWK53NFSS	
E 12106CHNFSS	E 12106CHNFSS6	E 10JTMAXD	E 12JS	E PWK53NFSS	
E 1212CHNFSS	E 1212CHNFSS6	E 12JTMA	E 12JS	E PWK53NFSS	
E 1412CHNFSS	-	E 12JTMA	E 14JS	E PWK95NFSS	
E 1614CHNFSS	E 1614CHNFSS6	E 14JTMA	E 16JS	E PWK95NFSS	



# Clamp Cover Junction Enclosures



## NEMA Rated Stainless Steel Boxes

These NEMA rated stainless steel junction boxes offer perfect protection for delicate electrical and electronic equipment. They meet the tough requirements of the chemical and food industries and off-shore environments. Their corrosion resistant design offers protection against chemical influences.

They can be used inside or outside to protect installed equipment against splashing water, seepage of water, falling or hose directed water, severe external condensation and spraying of water, oil or coolants.



### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Stainless steel cover clamps and screws
- External mounting brackets
- Mounting panel provisions installed (except E 404NFSS)

### Technical Specifications

#### Material:

- Enclosure/door: 14 gauge Type 304 stainless steel

#### Finish:

- Enclosure/door: # 3 brushed finish
- Optional stainless steel mounting panels: unpainted
- Optional carbon steel mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 54

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 404NFSS	4.00	4.00	3.00	-	-	-	-
E 6044NFSS	6.00	4.00	4.00	E 6P4	4.88	2.88	3.50
E 606NFSS	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 8064NFSS	8.00	6.00	4.00	E 8P6	6.88	4.88	3.50
E 1008NFSS	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 1210NFSS	12.00	10.00	5.00	E 12P10	10.88	8.88	4.50

Accessories			
Part No.	Terminal block kit	Terminal rails	Window kit
E 404NFSS	-	-	-
E 6044NFSS	-	-	-
E 606NFSS	-	-	-
E 8064NFSS	E 6JTMA	E 8JS	-
E 1008NFSS	E 8JTMA	E 10JS	E PWK53NFSS
E 1210NFSS	E 10JTMAXD	E 12JS	E PWK53NFSS

# Clamp Cover Junction Enclosures



## NEMA Rated Aluminum Boxes

These NEMA rated, durable aluminum junction boxes offer perfect protection for delicate electrical and electronic equipment. They are designed to house pilot devices, such as limit switches, foot switches, pushbuttons, selector switches and pilot lights.

They can be used inside or outside to protect installed equipment against splashing water, seepage of water, falling or hose directed water, severe external condensation and spraying of water, oil or coolants or where corrosion is a problem.



### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Stainless steel clamps and screws
- External mounting brackets
- Mounting panel provisions installed

### Technical Specifications

#### Material:

- Enclosure/cover: .080 aluminum Type 5052 H-32

#### Finish:

- Enclosure/cover: natural – brushed finish
- Optional aluminum mounting panels: unpainted
- Optional carbon steel mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 55

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 604NFAL	6.00	4.00	3.00	E 6P4	4.88	2.88	2.50
E 606NFAL	6.00	6.00	4.00	E 6P6	4.88	4.88	3.50
E 8064NFAL	8.00	6.00	4.00	E 8P6	6.88	4.88	3.50
E 1008NFAL	10.00	8.00	4.00	E 10P8	8.88	6.88	3.50
E 1210NFAL	12.00	10.00	5.00	E 12P10	10.88	8.88	4.50
E 1412NFAL	14.00	12.00	6.00	E 14P12	12.88	10.88	5.50
E 1614NFAL	16.00	14.00	6.00	E 16P14	14.88	12.88	5.50

Accessories			
Part No.	Terminal block kit	Terminal rails	Window kit
E 604NFAL	-	-	-
E 606NFAL	-	-	-
E 8064NFAL	E 6JTMA	E 8JS	-
E 1008NFAL	E 8JTMA	E 10JS	E PWK53NFSS
E 1210NFAL	E 10JTMAXD	E 12JS	E PWK53NFSS
E 1412NFAL	E 12JTMA	E 14JS	E PWK95NFSS
E 1614NFAL	E 14JTMA	E 16JS	E PWK95NFSS



# AE Wallmount Enclosures



## NEMA Rated Wallmount Enclosures

Since its introduction more than 30 years ago, Rittal's unequaled AE wallmount enclosures have been continually improved. The stainless steel AE enclosures provide the strongest possible corrosion resistance, thus satisfying the needs of the most demanding industries.



Page WMT 15

## Configuration

- NEMA 1, 4, 4X, 12 protection/IP 66
- UL/CSA/TÜV approvals
- Mounting panel included
- Hinged door
- Constructed from Type 304 stainless steel
- Knife-edge design protects against liquid entry
- Integrated grounding provisions
- Welded stainless steel body
- Foamed-on gaskets ensure perfect seal
- Wide range of accessories
- Off-the-shelf availability

## Technical Specifications

### Material:

- Type 304 stainless steel
- *Housing:* 18 ga/1.25 mm (AE 1002)  
16 ga/1.5 mm (AE 1004-1017)
- *Door:* 16 ga/1.5 mm (AE 1002-1008)  
14 ga/2.0 mm (AE 1010-1017)
- *Mounting panel:* hot-dipped galvanized zinc  
14 ga/2.0 mm (AE 1002-1004)  
13 ga/2.5 mm (AE 1005-1009)  
12 ga/2.75 mm (AE 1010)  
11 ga/3.0 mm (AE 1012-1017)

### Finish:

- *Exterior surfaces:* brushed finish
- *Mounting panel:* Type M

## Protection Ratings

NEMA Type  1  4  4X  12  13

## Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

## Technical Drawings

Page ..... NON 56

Part No.	Enclosure				Mounting Panel								
	Approximate outside dimensions H'xW'xD'	NEMA rating	Number of doors	Exact outside dimensions						Dimensions			
				inches			mm			inches		mm	
H	W	D	H	W	D	H	W	H	W	H	W		
1002600	12x8x6	1, 4, 4X, 12	1	11.81	7.87	6.10	300	200	155	10.83	6.38	275	162
1004600	12x15x6	1, 4, 4X, 12	1	11.81	14.96	6.10	300	380	155	10.83	13.15	275	334
1005600	15x12x8	1, 4, 4X, 12	1	14.96	11.81	8.27	380	300	210	13.98	13.15	355	334
1006600	15x15x8	1, 4, 4X, 12	1	14.96	14.96	8.27	380	380	210	13.98	13.15	355	334
1009600	15x24x8	1, 4, 4X, 12	1	14.96	23.62	8.27	380	600	210	13.98	21.61	355	549
1097000	16x12x8	1, 4, 4X, 12	1	15.75	11.81	8.27	400	300	210	14.76	10.00	375	254
1007600	20x20x8	1, 4, 4X, 12	1	19.69	19.69	8.27	500	500	210	18.50	17.68	470	449
1008600	24x15x8	1, 4, 4X, 12	1	23.62	14.96	8.27	600	380	210	22.44	13.15	570	334
1010600	24x24x8	1, 4, 4X, 12	1	23.62	23.62	8.27	600	600	210	22.44	21.61	570	549
1012600	30x24x8	1, 4, 4X, 12	1	29.92	23.62	8.27	760	600	210	28.74	21.61	730	549
1014600	30x30x12	1, 4, 4X, 12	1	29.92	29.92	11.81	760	760	300	28.74	27.72	730	704
1016600	40x32x12	1, 4, 4X, 12	1	39.37	31.50	11.81	1000	800	300	37.60	29.09	955	739
1017600	47x31x12	1, 4, 4X, 12	1	47.24	31.50	11.81	1200	800	300	45.28	29.13	1150	740

Note: Also available with integrated blind nuts — order Part No. XXXX.660.

Part No.	Accessories				
	Stainless steel wallmounting brackets 3/8" stand-off	T-Handle	Pole mounting kit	Ground strap 7' long/ 11 AWG	Print pocket
1002600	2433000	2572000	2584000	2564000	-
1004600	2433000	2572000	2584000	2564000	-
1005600	2433000	2572000	2584000	2564000	-
1006600	2433000	2572000	2584000	2564000	2514000
1009600	2433000	2572000	2584000	2564000	2514000
1097000	2433000	2572000	2584000	2564000	-
1007600	2433000	2572000	2584000	2564000	2514000
1008600	2433000	2572000	2584000	2564000	2514000
1010600	2433000	2572000	2584000	2564000	2514000
1012600	2433000	2572000	2584000	2564000	2514000
1014600	2433000	2572000	-	2564000	2514000
1016600	2433000	2572000	-	2564000	2514000
1017600	2433000	-	-	2564000	2514000

# Legacy Series Enclosures



AVAILABLE AUGUST 2001

## Stainless Steel Wallmount Boxes

Legacy Series stainless steel instrument boxes offer protection for dense wiring and sensitive small electronic and electric equipment controls and pilot devices, such as limit switches, foot switches, pushbuttons, selector switches and pilot lights. Installed equipment is protected against splashing water, seepage of water, falling or hose directed water, severe external condensation and spraying of water, oil or coolant.



## Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Easily removable stainless steel hinge pins
- Knife edge flange
- Door opens 130°
- Integral channel around door provides additional stability and prevents entry of water and dirt when enclosure is opened
- Quarter turn latching
- Screwdriver lock insert
- Mounting panel provisions installed
- Mounting panel available in both white (NEMA) and zinc (full size) styles
- Grounding provisions on enclosure body
- Print pocket included

## Technical Specifications

**Material:**  
 • Enclosure/door: 14 gauge Type 304 stainless steel

**Finish:**  
 • Enclosure/door: # 4 brushed finish

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

Page ..... NON 57

Part No.	Enclosure			Latch system	Mounting Panel	
	Outside dimensions (inches)				Zinc (Full Size) Panel	White (NEMA Style)
	H	W	D		Part No.	Panel Part No.
L W120806SS	12.00	8.00	6.00	1 Qtr. Turn	L W12P8	E 12P8
L W121206SS	12.00	12.00	6.00	1 Qtr. Turn	L W12P12	E 12P12
L W161206SS	16.00	12.00	6.00	1 Qtr. Turn	L W16P12	E 16P12
L W161208SS	16.00	12.00	8.00	1 Qtr. Turn	L W16P12	E 16P12
L W161606SS	16.00	16.00	6.00	1 Qtr. Turn	L W16P16	E 16P16
L W161608SS	16.00	16.00	8.00	1 Qtr. Turn	L W16P16	E 16P16
L W201608SS	20.00	16.00	8.00	2 Qtr. Turn	L W20P16	E 20P16
L W202008SS	20.00	20.00	8.00	2 Qtr. Turn	L W20P20	E 20P20
L W202012SS	20.00	20.00	12.00	2 Qtr. Turn	L W20P20	E 20P20
L W242008SS	24.00	20.00	8.00	2 Qtr. Turn	L W24P20	E 24P20
L W242012SS	24.00	20.00	12.00	2 Qtr. Turn	L W24P20	E 24P20
L W242408SS	24.00	24.00	8.00	2 Qtr. Turn	L W24P24	E 24P24
L W242412SS	24.00	24.00	12.00	2 Qtr. Turn	L W24P24	E 24P24
L W302408SS	30.00	24.00	8.00	2 Qtr. Turn	L W30P24	E 30P24
L W302412SS	30.00	24.00	12.00	2 Qtr. Turn	L W30P24	E 30P24
L W303008SS	30.00	30.00	8.00	2 Qtr. Turn	L W30P30	E 30P30
L W303012SS	30.00	30.00	12.00	2 Qtr. Turn	L W30P30	E 30P30
L W362408SS	36.00	24.00	8.00	2 Qtr. Turn	L W36P24	E 36P24
L W363012SS	36.00	30.00	12.00	2 Qtr. Turn	L W36P30	E 36P30
L W483612SS	48.00	36.00	12.00	3 Point Lock System	L W48P36	E 48P36
L W603616SS	60.00	36.00	16.00	3 Point Lock System	L W60P36	E 60P36

Part No.	Accessories			
	Wallmounting brackets	Print pocket	Light	Ground straps
L W120806SS	1594000	E POCKET1	-	2564000
L W121206SS	1594000	E POCKET1	-	2564000
L W161206SS	1594000	E POCKET1	-	2564000
L W161208SS	1594000	E POCKET1	-	2564000
L W161606SS	1594000	E POCKET1	-	2564000
L W161608SS	1594000	E POCKET1	-	2564000
L W201608SS	1594000	E POCKET1	-	2564000
L W202008SS	1594000	E POCKET1	9968111	2564000
L W202012SS	1594000	E POCKET1	9968111	2564000
L W242008SS	1594000	E POCKET1	9968111	2564000
L W242012SS	1594000	E POCKET1	9968111	2564000
L W242408SS	1594000	E POCKET1	9968111	2564000
L W242412SS	1594000	E POCKET1	9968111	2564000
L W302408SS	1594000	E POCKET1	9968111	2564000
L W302412SS	1594000	E POCKET1	9968111	2564000
L W303008SS	1594000	E POCKET1	9968111	2564000
L W303012SS	1594000	E POCKET1	9968111	2564000
L W362408SS	1594000	E POCKET1	9968111	2564000
L W363012SS	1594000	E POCKET1	9968111	2564000
L W483612SS	1594000	E POCKET1	9968111	2564000
L W603616SS	1594000	E POCKET1	9968111	2564000

# One Door Wallmount Boxes



## NEMA 4X Stainless Steel Enclosures

These NEMA 4X rated stainless steel enclosures are designed for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.



Page WMT 19



Page NON 17

### Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous stainless steel hinge with removable pin
- Stainless steel captive clamps
- Hasp and staple for padlocking
- Door and body stiffeners on larger sizes
- Mounting panel provisions installed
- External mounting brackets
- Print pocket included

### Technical Specifications

#### Material:

- Enclosure/door: 14 gauge stainless steel Type 304 or Type 316 (see table)

#### Finish:

- Enclosure/door: # 3 brushed finish
- Optional stainless steel mounting panels: unpainted
- Optional carbon steel mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

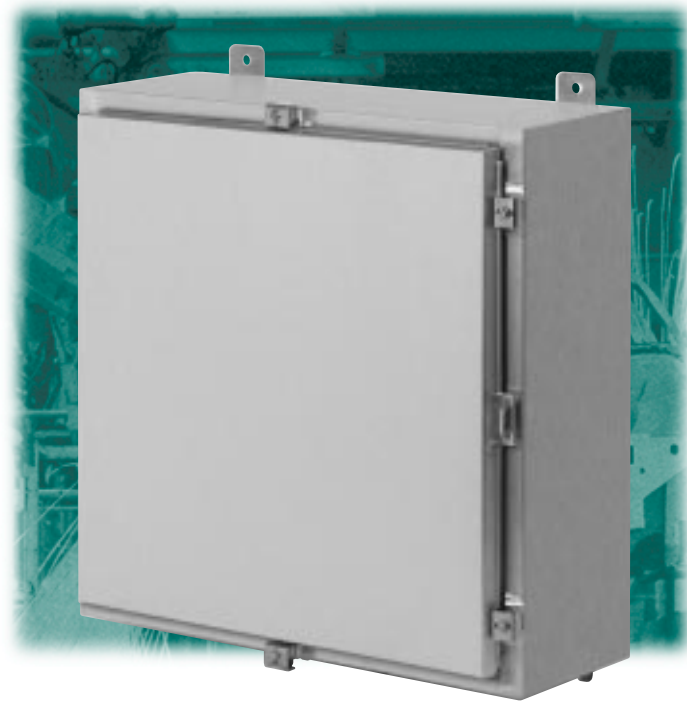
Page ..... NON 58

Enclosure				Mounting Panel				
Part No. 304 SS	Part No. 316 SS	Outside dimensions (inches)			Part No.	Panel size		Usable depth
		H	W	D		H	W	
E 16H1206SS	E 16H1206SS6	16.00	12.00	6.00	E 16P12	13.00	9.00	6.00
E 16H1606SS	E 16H1606SS6	16.00	16.00	6.00	E 16P16	13.00	13.00	6.00
E 20H1606SS	E 20H1606SS6	20.00	16.00	6.00	E 20P16	17.00	13.00	6.00
E 20H2006SS	E 20H2006SS6	20.00	20.00	6.00	E 20P20	17.00	17.00	6.00
E 24H1206SS	-	24.00	12.00	6.00	E 12P24	21.00	9.00	6.00
E 24H2006SS	E 24H2006SS6	24.00	20.00	6.00	E 24P20	21.00	17.00	6.00
E 24H2406SS	-	24.00	24.00	6.00	E 24P24	21.00	21.00	6.00
E 16H1208SS	-	16.00	12.00	8.00	E 16P12	13.00	9.00	8.00
E 20H1608SS	E 20H1608SS6	20.00	16.00	8.00	E 20P16	17.00	13.00	8.00
E 20H2008SS	E 20H2008SS6	20.00	20.00	8.00	E 20P20	17.00	17.00	8.00
E 20H2408SS	-	20.00	24.00	8.00	E 24P20	17.00	21.00	8.00
E 24H1608SS	-	24.00	16.00	8.00	E 24P16	21.00	13.00	8.00
E 24H2008SS	-	24.00	20.00	8.00	E 24P20	21.00	17.00	8.00
E 24H2408SS	E 24H2408SS6	24.00	24.00	8.00	E 24P24	21.00	21.00	8.00
E 24H3008SS	-	24.00	30.00	8.00	E 30P24	21.00	27.00	8.00
E 30H2008SS	-	30.00	20.00	8.00	E 30P20	27.00	17.00	8.00
E 30H2408SS	E 30H2408SS6	30.00	24.00	8.00	E 30P24	27.00	21.00	8.00
E 30H3008SS	-	30.00	30.00	8.00	E 30P30	27.00	27.00	8.00
E 36H2408SS	E 36H2408SS6	36.00	24.00	8.00	E 36P24	33.00	21.00	8.00
E 36H3008SS	-	36.00	30.00	8.00	E 36P30	33.00	27.00	7.37*
E 20H1610SS	-	20.00	16.00	10.00	E 20P16	17.00	13.00	10.00
E 24H2010SS	-	24.00	20.00	10.00	E 24P20	21.00	17.00	10.00
E 30H2410SS	-	30.00	24.00	10.00	E 30P24	27.00	21.00	10.00
E 36H2410SS	-	36.00	24.00	10.00	E 36P24	33.00	21.00	10.00
E 36H3010SS	-	36.00	30.00	10.00	E 36P30	33.00	27.00	9.37*
E 42H3010SS	-	42.00	30.00	10.00	E 42P30	39.00	27.00	9.37*
E 24H2412SS	E 24H2412SS6	24.00	24.00	12.00	E 24P24	21.00	21.00	12.00
E 30H2412SS	-	30.00	24.00	12.00	E 30P24	27.00	21.00	12.00
E 36H3012SS	E 36H3012SS6	36.00	30.00	12.00	E 36P30	33.00	27.00	11.37*
E 36H3612SS	-	36.00	36.00	12.00	E 36P36	33.00	33.00	11.37*
E 48H3612SS	E 48H3612SS6	48.00	36.00	12.00	E 48P36	45.00	33.00	11.37*
E 60H3612SS	-	60.00	36.00	12.00	E 60P36	57.00	33.00	11.37*
E 30H2416SS	E 30H2416SS6	30.00	24.00	16.00	E 30P24	27.00	21.00	16.00
E 36H3016SS	-	36.00	30.00	16.00	E 36P30	33.00	27.00	15.37*
E 48H3616SS	-	48.00	36.00	16.00	E 48P36	45.00	33.00	15.37*
E 60H3616SS	E 60H3616SS6	60.00	36.00	16.00	E 60P36	57.00	33.00	15.37*

\* Usable depth reduced by .625" at door stiffener.

Accessories							
Part No. 304 SS	Part No. 316 SS	Door stop kit	Drip shield kit	Terminal block kit	Terminal rails	Fast operating clamp	Window kit
E 16H1206SS	E 16H1206SS6	-	E DK12NFSS	E 12NTMA2	E 16NS	E FOC412SS	E PWK95NFSS
E 16H1606SS	E 16H1606SS6	-	E DK16NFSS	E 16NTMA2	E 16NS	E FOC412SS	E PWK95NFSS
E 20H1606SS	E 20H1606SS6	-	E DK16NFSS	E 16NTMA2	E 20NS	E FOC412SS	E PWK138NFSS
E 20H2006SS	E 20H2006SS6	-	E DK20NFSS	E 20NTMA2	E 20NS	E FOC412SS	E PWK138NFSS
E 24H1206SS	-	-	E DK12NFSS	E 12NTMA2	E 24NS	E FOC412SS	E PWK138NFSS
E 24H2006SS	E 24H2006SS6	-	E DK20NFSS	E 20NTMA2	E 24NS	E FOC412SS	E PWK1711NFSS
E 24H2406SS	-	E DSTOPK	E DK24NFSS	E 24NTMA3	E 24NS	E FOC412SS	E PWK1711NFSS
E 16H1208SS	-	-	E DK12NFSS	E 12NTMA2	E 16NS	E FOC412SS	E PWK138NFSS
E 20H1608SS	E 20H1608SS6	-	EDK16NFSS	E 16NTMA2	E 20NS	E FOC412SS	E PWK138NFSS
E 20H2008SS	E 20H2008SS6	-	E DK20NFSS	E 20NTMA2	E 20NS	E FOC412SS	E PWK138NFSS
E 20H2408SS	-	E DSTOPK	E DK24NFSS	E 24NTMA3	E 20NS	E FOC412SS	E PWK138NFSS
E 24H1608SS	-	-	E DK16NFSS	E 16NTMA2	E 24NS	E FOC412SS	E PWK138NFSS
E 24H2008SS	-	-	E DK20NFSS	E 20NTMA2	E 24NS	E FOC412SS	E PWK1711NFSS
E 24H2408SS	E 24H2408SS6	E DSTOPK	E DK24NFSS	E 24NTMA3	E 24NS	E FOC412SS	E PWK1711NFSS
E 24H3008SS	-	E DSTOPK	E DK30NFSS	E 30NTMA3	E 24NS	E FOC412SS	E PWK1711NFSS
E 30H2008SS	-	-	E DK20NFSS	E 20NTMA2	E 30NS	E FOC412SS	E PWK1711NFSS
E 30H2408SS	E 30H2408SS	E DSTOPK	E DK24NFSS	E 24NTMA3	E 30NS	E FOC412SS	E PWK2315NFSS
E 30H3008SS	-	E DSTOPK	E DK30NFSS	E 30NTMA3	E 30NS	E FOC412SS	E PWK2315NFSS
E 36H2408SS	E 36H2408SS6	E DSTOPK	E DK24NFSS	E 24NTMA3	E 36NS	E FOC412SS	E PWK2315NFSS
E 36H3008SS	-	E DSTOPK	E DK30NFSS	E 30NTMA3	E 36NS	E FOC412SS	E PWK2919NFSS
E 20H1610SS	-	-	E DK16NFSS	E 16NTMA2	E 20NS	E FOC412SS	E PWK138NFSS
E 24H2010SS	-	-	E DK20NFSS	E 20NTMA2	E 24NS	E FOC412SS	E PWK1711NFSS
E 30H2410SS	-	E DSTOPK	E DK24NFSS	E 24NTMA3	E 30NS	E FOC412SS	E PWK2315NFSS
E 36H2410SS	-	E DSTOPK	E DK24NFSS	E 24NTMA3	E 36NS	E FOC412SS	E PWK2315NFSS
E 36H3010SS	-	E DSTOPK	E DK30NFSS	E 30NTMA3	E 36NS	E FOC412SS	E PWK2919NFSS
E 42H3010SS	-	E DSTOPK	E DK30NFSS	E 30NTMA3	E 42NS	E FOC412SS	E PWK2919NFSS
E 24H2412SS	E 24H2412SS6	E DSTOPK	E DK24NFSS	E 24NTMA3	E 24NS	E FOC412SS	E PWK1711NFSS
E 30H2412SS	-	E DSTOPK	E DK24NFSS	E 24NTMA3	E 30NS	E FOC412SS	E PWK2315NFSS
E 36H3012SS	E 36H3012SS6	E DSTOPK	E DK30NFSS	E 30NTMA3	E 36NS	E FOC412SS	E PWK2919NFSS
E 36H3612SS	-	E DSTOPK	E DK36NFSS	E 36NTMA3	E 36NS	E FOC412SS	E PWK2919NFSS
E 48H3612SS	E 48H3612SS6	E DSTOPK	E DK36NFSS	E 36NTMA3	E 48NS	E FOC412SS	E PWK2919NFSS
E 60H3612SS	-	E DSTOPK	E DK36NFSS	E 36NTMA3	E 60NS	E FOC412SS	E PWK2919NFSS
E 30H2416SS	E 30H2416SS6	E DSTOPK	E DK24NFSS	E 24NTMA3	E 30NS	E FOC412SS	E PWK2315NFSS
E 36H3016SS	-	E DSTOPK	E DK30NFSS	E 30NTMA3	E 36NS	E FOC412SS	E PWK2919NFSS
E 48H3616SS	-	E DSTOPK	E DK36NFSS	E 36NTMA3	E 48NS	E FOC412SS	E PWK2919NFSS
E 60H3616SS	E 60H3616SS6	E DSTOPK	E DK36NFSS	E 36NTMA3	E 60NS	E FOC412SS	E PWK2919NFSS

# One Door Wallmount Boxes



## NEMA 4X Aluminum Enclosures

These NEMA 4X rated aluminum enclosures are designed for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.



Page WMT 19



Page NON 15

## Configuration

- Continuously welded seams, finished smooth
- Robotically applied urethane gasket
- Continuous hinge with removable pin
- 12 gauge stainless steel captive clamps
- Hasp and staple for padlocking
- Door and body stiffeners on larger sizes
- Mounting panel provisions installed
- External mounting brackets
- Print pocket included

## Technical Specifications

### Material:

- *Enclosure/door:* .080 aluminum Type 5052 H-32

### Finish:

- *Enclosure/door:* natural, brushed finish
- *Optional aluminum mounting panels:* unpainted
- *Optional carbon steel mounting panels:* painted white

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

## Technical Drawings

Page ..... NON 59

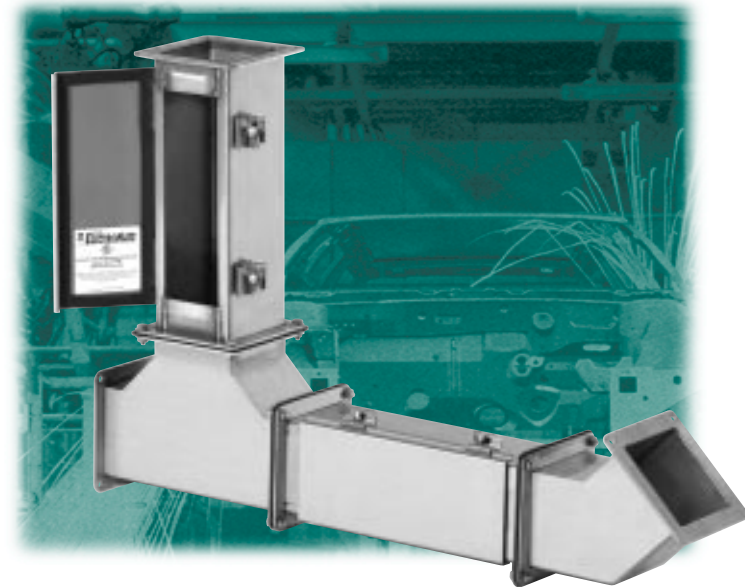
Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 16H1206AL	16.00	12.00	6.00	E 16P12	13.00	9.00	6.00
E 20H1606AL	20.00	16.00	6.00	E 20P16	17.00	13.00	6.00
E 20H2006AL	20.00	20.00	6.00	E 20P20	17.00	17.00	6.00
E 24H2006AL	24.00	20.00	6.00	E 24P20	21.00	17.00	6.00
E 16H1608AL	16.00	16.00	8.00	E 16P16	13.00	13.00	8.00
E 24H2408AL	24.00	24.00	8.00	E 24P24	21.00	21.00	8.00
E 30H2408AL	30.00	24.00	8.00	E 30P24	27.00	21.00	8.00
E 30H2412AL	30.00	24.00	12.00	E 30P24	27.00	21.00	12.00
E 36H3012AL	36.00	30.00	12.00	E 36P30	33.00	27.00	11.37*

\* Usable depth reduced by .625" at stiffener.

Accessories						
Part No.	Door stop kit	Drip shield kit	Terminal block kit	Terminal rails	Fast operating clamp assembly	Window kit
E 16H1206AL	-	E DK12NFSS	E 12NTMA2	E 16NS	E FOC412SS	E PWK95NFSS
E 20H1606AL	-	E DK16NFSS	E 16NTMA2	E 20NS	E FOC412SS	E PWK138NFSS
E 20H2006AL	-	E DK20NFSS	E 20NTMA2	E 20NS	E FOC412SS	E PWK138NFSS
E 24H2006AL	-	E DK20NFSS	E 20NTMA2	E 24NS	E FOC412SS	E PWK1711NFSS
E 16H1608AL	-	E DK16NFSS	E 16NTMA2	E 16NS	E FOC412SS	E PWK95NFSS
E 24H2408AL	E DSTOPK	E DK24NFSS	E 24NTMA3	E 24NS	E FOC412SS	E PWK1711NFSS
E 30H2408AL	E DSTOPK	E DK24NFSS	E 24NTMA3	E 30NS	E FOC412SS	E PWK2315NFSS
E 30H2412AL	E DSTOPK	E DK24NFSS	E 24NTMA3	E 30NS	E FOC412SS	E PWK2315NFSS
E 36H3012AL	E DSTOPK	E DK30NFSS	E 30NTMA3	E 36NS	E FOC412SS	E PWK2919NFSS



# Feed-Through Type 4X Wireway



## Stainless Steel Wire Management

Rittal Electromate's stainless steel feed-through wireway products were designed to be used in applications where the environment is wet or corrosive. All straight sections feature a hinged-top design for easy access.



### Configuration

- Stainless steel feed-through wireways are available in two sizes: 4.0" x 4.0" 6.0" x 6.0"
- Lengths from 12" to 120"
- Continuously welded seams, finished smooth
- Edges on all sections and fittings are finished to prevent damage to wiring
- A complete seal is ensured through heavy butt hinges and quick-release latches
- Oil-resistant gaskets inside cover and between flanges ensure seal when sections and fittings are bolted together

### Technical Specifications

- Material:**
- Wireways/covers: 14 gauge stainless steel
  - Flange ends: 10 gauge stainless steel
- Finish:**
- Wireways/covers: # 3 brushed finish

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Pages ..... **NON 60-61**

Wireway		
Part No.		Description
4.00 x 4.00	6.00 x 6.00	
E 44W12SS	E 66W12SS	12.00" Straight section
E 44W24SS	E 66W24SS	24.00" Straight section
E 44W36SS	E 66W36SS	36.00" Straight section
E 44W48SS	E 66W48SS	48.00" Straight section
E 44W60SS	E 66W60SS	60.00" Straight section
E 44W120SS	E 66W120SS	120.00" Straight section
E 44WASS	E 66WASS	Telescopic fitting
E 44WX	E 66WX	Cutoff fitting
E 44WE45SS	E 66WE45SS	45° Elbow
E 44WE90SS	E 66WE90SS	90° Elbow
E 44WTSS	E 66WTSS	Tee
E 44WPSS	E 66WPSS	Closure plate
E 44WBSS	E 66WBSS	Box connecting kit
E 44WGSS	E 66WGSS	Collar gasket
-	E 66WR44SS	Reducer 6" to 4", center hole
-	E 66WRE44SS	Reducer 6" to 4", edge hole
E 44WN6SS	E 66WN6SS	6.00" Nipple
E 44HBSS	E 66HBSS	Bracket hanger
E 44HDSS	E 66HDSS	Drop hanger

# PS Stainless Steel Enclosures



## Stainless Steel Freestanding Enclosures

Rittal's stainless steel enclosures meet the tough requirements of the food and chemical industries and off-shore environments. They resist corrosion, protect against dust and liquids, promote hygiene, and resist chemical influences.

Rittal's PS series freestanding enclosures are the world's leading modular enclosures. Based on Rittal's patented "Perfect System" technology, the PS enclosures offer a modular design for unlimited expandability and flexibility.

**NOTE:** NEMA 4/4X upgrade available upon request.



### Configuration

- NEMA 1, 12 protection/IP 55
- Type 304 stainless steel construction
- High-quality brushed stainless steel finish
- All stainless steel frame
- Knife-edge design protects against liquid entry
- Integrated mounting provisions
- 180° hinges are standard
- Maximum strength and stability
- Time saving quick assembly method
- Foamed-on gasket
- Unlimited versatility through a variety of standard modular parts
- Off-the-shelf availability
- Enclosures can easily be interconnected

### Technical Specifications

- Material:**
- Type 304 stainless steel
  - Frame: 9-fold roll-formed
  - Door: 14 ga/2 mm
  - Rear wall: 16 ga/1.5 mm
  - Mounting panel: 11 ga/3 mm hot-dipped galvanized zinc

- Finish:**
- Exterior surfaces: brushed finish
  - Mounting panel: Type M

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **NON 62**

Part No.	Approximate outside dimensions H"xW"xD"	NEMA rating	Number of doors	Exact outside dimensions						Mounting Panel Dimensions			
				inches			mm			inches		mm	
				H	W	D	H	W	D	H	W	H	W
4452600	78x24x24	1, 12	1	78.24	23.62	23.62	2000	600	600	74.65	19.65	1896	499
4450600	78x32x24	1, 12	1	78.74	31.50	23.62	2000	800	600	74.65	27.52	1896	699
4451600	78x48x24	1, 12	2	78.74	47.24	23.62	2000	1200	600	74.65	43.27	1896	1099

Part No.	Side wall	Base 4" high	Leveling feet adjustable	Interconnecting kit		Fluorescent lights	Print pocket	Handle	
				Brackets	Pins			Ergoform-S	Pushbutton
				4452600	4466000			2855000	2889000
4450600	4466000	2856000	2889000	4582000	4580000	9968112	4116000	2452000	2468000
4451600	4466000	2857000	2889000	4582000	4580000	9968112	4116000	2452000	2468000



# One Door Freestanding Enclosures



## NEMA Rated Stainless Steel Enclosures

Rittal Electromate NEMA 4X freestanding stainless steel enclosures accept standard as well as rackmount electrical and electronic components. These enclosures are intended for indoor or outdoor applications to protect installed equipment against splashing water, seepage of water, falling or hose directed water, and external condensation.



Page FST 3

### Configuration

- Continuously welded seams, finished smooth
- Neoprene strip gasket
- Continuous stainless steel hinge with removable pin
- Hasp and staple for padlock
- Stainless steel captive clamps
- Removable heavy duty lifting eyes mounted to the top
- C-channels are welded to interior sides for optional mounting
- Print pocket included

### Technical Specifications

#### Material:

- Enclosure/door: 12 gauge Type 304 stainless steel

#### Finish/color:

- Enclosure/door: # 3 brushed finish
- Optional stainless steel mounting panels: unpainted
- Optional carbon steel mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 63

Enclosure				Full Mounting Panel		Half Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Part No.	Panel size	
	H	W	D		H	W		H	W
E 72H2518FSSS	72.00	25.00	18.00	E 72P24F1	60.00	20.00	E 72P24F2	30.88	20.00
E 72H3124FSSS	72.00	31.00	24.00	E 72P30F1	60.00	26.00	E 72P30F2	30.88	26.00
E 72H3724FSSS	72.00	37.00	24.00	E 72P36F1	60.00	32.00	E 72P36F2	30.88	32.00

Accessories			
Part No.	Door stop kit	Window kit	Fast operating clamp
E 72H2518FSSS	E DSTOPK	E PWK2919NFSS	E FOC412SS
E 72H3124FSSS	E DSTOPK	E PWK2919NFSS	E FOC412SS
E 72H3724FSSS	E DSTOPK	E PWK2919NFSS	E FOC412SS

# One/Two Door Freestanding Cabinets



## Single Access Enclosures

Rittal Electromate stainless steel NEMA rated freestanding enclosures accept standard as well as rackmount electrical and electronic components. These enclosures are intended for indoor applications to protect installed equipment against dust, dirt, oil and water.



Page FST 11

### Configuration

- Standard types are available
  - Type "FS" – one door, single access
  - Type "FSDD" – two door, single access
- Continuously welded seams, finished smooth
- Body stiffener for added support
- Neoprene strip gasket
- Continuous stainless steel hinge with removable pin
- 3-point latch with oil tight key locking handle
- Removable heavy duty lifting eyes mounted to the top
- C-channels are welded to interior sides for optional mounting
- Print pocket included

### Technical Specifications

#### Material:

- All steel parts: 12 gauge Type 304 stainless steel
- back of FSDD: 10 gauge Type 304 stainless steel

#### Finish:

- Enclosure/door(s): # 3 brushed finish
- Optional carbon steel mounting panels: painted white

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 64

Enclosure				
Part No.	Outside dimensions (inches)			Maximum usable depth panel installed
	H	W	D	
<b>One Door Single Access</b>				
E 723618FSSS	72.00	36.00	18.00	17.63
E 723624FSSS	72.00	36.00	24.00	23.63
<b>Two Door Single Access</b>				
E 727224FSDDSS	72.00	72.00	24.00	21.13

Accessories		
Part No.	Door stop kit	Window kit
<b>One Door Single Access</b>		
E 723618FSSS	E DSTOPK	E PWK2919NFSS
E 723624FSSS	E DSTOPK	E PWK2919NFSS
<b>Two Door Single Access</b>		
E 727224FSDDSS	E DSTOPK	E PWK2919NFSS



# Two Door Floormount Enclosures

# NEMA 4X Wallmount FMD Boxes



## NEMA 4X Stainless Steel Cabinets

These NEMA 4X rated stainless steel floormount enclosures are designed for indoor or outdoor use to protect equipment against splashing water, seepage of water, falling or hose directed water and external condensation.



## FMD Stainless Steel Cabinets

Rittal Electromate NEMA rated wallmount disconnect enclosures accept all standard available disconnects and circuit breakers, including:

- Allen Bradley:**  
1494 V operators for disconnects/circuit breakers
- Cutler Hammer/Westinghouse:**  
C361 operators for disconnect switches  
C371 operators for circuit breakers
- General Electric:**  
Type STDA operators for disconnects
- ITE/Siemens:**  
Max-Flex operators for disconnect switches/circuit breakers
- Square D:**  
Class 9422 operators for disconnects/circuit breakers
- ABB:**  
Operators for disconnect switches/circuit breakers



### Configuration

- Continuously welded seams, finished smooth
- Removable center post
- Body stiffener for added support
- Stainless steel captive clamps
- Oil resistant neoprene strip gasket
- Continuous stainless steel heavy duty hinge with removable pin
- Hasp and staple for padlocking
- Mounting panel provisions installed
- Removable heavy duty lifting eyes
- 12" floor stands are welded to enclosure
- Print pocket included

### Technical Specifications

- Material:**
- Type 304 stainless steel  
Body: 12 gauge  
Back: 12 gauge  
(10 gauge for H or W ≥ 72")
- Finish:**
- Enclosure/door: # 3 brushed finish
  - Optional stainless steel mounting panels: unpainted
  - Optional carbon steel mounting panels: painted white

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **NON 65**

### Configuration

- Continuously welded seams, finished smooth
- Continuous stainless steel hinge with removable pin
- Robotically applied urethane gasket
- Rolled edge prevents entry of dirt and liquids
- Cutout in body for operating handle
- 12 gauge stainless steel captive clamps
- Mounting panel provisions installed
- External mounting brackets
- Print pocket included

### Technical Specifications

- Material:**
- Enclosure/door: 14 gauge stainless steel
- Finish:**
- Enclosure/door: # 3 brushed finish
  - Optional stainless steel mounting panels: unpainted
  - Optional carbon steel mounting panels: painted white

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **NON 65**

Enclosure				Mounting Panel			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D		H	W	
E 62H4812SS	62.00	48.00	12.00	E 60P48	56.00	44.00	12.00
E 62H6012SS	62.00	60.00	12.00	E 60P60	56.00	56.00	12.00
E 74H7224SS	74.00	72.00	24.00	E 72P72	68.00	68.00	24.00

Accessories			
Part No.	Door stop kit	Window kit	Fast operating clamp
E 62H4812SS	E DSTOPK	E PWK2919NFSS	E FOC412SS
E 62H6012SS	E DSTOPK	E PWK2919NFSS	E FOC412SS
E 74H7224SS	E DSTOPK	E PWK2919NFSS	E FOC412SS

Enclosure				Mounting Panel			Accessories	
Part No.	Outside dimensions (inches)			Part No.	Mounting panel size		Usable depth	Operator adaptors
	H	W	D		H	W		
E 24HS2508SS	24.00	25.38	8.00	E 24P24	21.00	21.00	8.00	See accessories section
E 36HS3108SS	36.00	31.38	8.00	E 36P30	33.00	27.00	7.37*	See accessories section
E 42HS3112SS	42.00	31.38	12.00	E 42P30	39.00	27.00	11.37*	See accessories section
E 48HS3712SS	48.00	37.38	12.00	E 48P36	45.00	33.00	11.37*	See accessories section
E 60HS3712SS	60.00	37.38	12.00	E 60P36	57.00	33.00	11.37*	See accessories section

\* Usable depth reduced by .625" at door stiffener.

# Standard Pushbutton Boxes



## NEMA Rated Pushbutton Enclosures

These stainless steel NEMA rated boxes are designed for indoor use to house pushbuttons, selector switches, pilot lights, etc., and to protect such equipment against dirt, dust, and spraying of water, oil or coolant.

Several models of these pushbutton enclosures can be mounted onto a Rittal Electromate column and base and used as an operator station.



# Slim Pushbutton Boxes



## NEMA Rated Pushbutton Enclosures

These NEMA rated boxes are designed for indoor use to house pushbuttons, selector switches, pilot lights, etc., and to protect such equipment against dirt, dust, and spraying of water, oil or coolant.



### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Standard pushbutton holes accept all brands of "4-way" oil tight pushbuttons, switches, and pilot lights
- Captive stainless steel screws to hold cover
- External mounting brackets

### Technical Specifications

**Material:**

- Enclosure/cover: 14 gauge Type 304 stainless steel

**Finish:**

- Enclosure/cover: # 3 brushed finish

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 66

### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Standard pushbutton holes accept all brands of "4-way" oil tight pushbuttons, switches, and pilot lights
- Captive stainless steel screws to hold cover
- External mounting brackets

### Technical Specifications

**Material:**

- Enclosure/cover: 14 gauge Type 304 stainless steel

**Finish:**

- Enclosure/cover: # 3 brushed finish

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 66

Part No.	Pushbutton Box			Accessories
	Outside dimensions (inches)			
	H	W	D	Oil tight hole seals
E 1PBSS	3.50	3.25	2.75	See accessories section
E 2PBSS	5.75	3.25	2.75	See accessories section
E 3PBSS	8.00	3.25	2.75	See accessories section
E 4PBSS	10.25	3.25	2.75	See accessories section
E 4SPBSS*	7.25	6.25	3.00	See accessories section
E 6PBSS*	9.50	6.25	3.00	See accessories section
E 9PBSS*	9.50	8.50	3.00	See accessories section

\* Can be mounted to a Rittal Electromate column and base.

Part No.	Pushbutton Box			Accessories
	Outside dimensions (inches)			
	H	W	D	Oil tight hole seals
E 1PBSLSS	4.00	2.50	2.50	See accessories section
E 2PBSLSS	6.25	2.50	2.50	See accessories section



# Miniature Pushbutton Boxes

# Extra Deep Pushbutton Boxes



## NEMA Rated Pushbutton Enclosures

These stainless steel NEMA rated boxes are designed for indoor use to house pushbuttons, selector switches, pilot lights, etc., which mount in miniature “4-way” pushbutton holes, and to protect such equipment against dirt, dust, and spraying of water, oil or coolant.

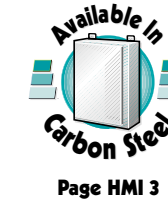
Several models of these pushbutton enclosures can be mounted onto a Rittal Electromate column and base and used as an operator station.



## NEMA Rated Pushbutton Enclosures

These stainless steel NEMA rated boxes are designed for indoor use to house pushbuttons, selector switches, pilot lights, etc., and to protect such equipment against dirt, dust, and spraying of water, oil or coolant. Their extra depth accommodates stacked pushbutton units.

Several models of these pushbutton enclosures can be mounted onto a Rittal Electromate column and base and used as an operator station.



### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Standard pushbutton holes accept all brands of 22.5 mm “4-way” oil tight pushbuttons, switches, and pilot lights
- Captive stainless steel screws to hold cover
- External mounting brackets

### Technical Specifications

- Material:**
- Enclosure/cover: 14 gauge Type 304 stainless steel
- Finish:**
- Enclosure/cover: # 3 brushed finish

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 67

### Configuration

- Continuously welded seams, finished smooth
- Poron strip gasket
- Standard pushbutton holes accept all brands of “4-way” oil tight pushbuttons, switches, and pilot lights
- Captive stainless steel screws to hold cover
- External mounting brackets

### Technical Specifications

- Material:**
- Enclosure/cover: 14 gauge Type 304 stainless steel
- Finish:**
- Enclosure/cover: # 3 brushed finish

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 67

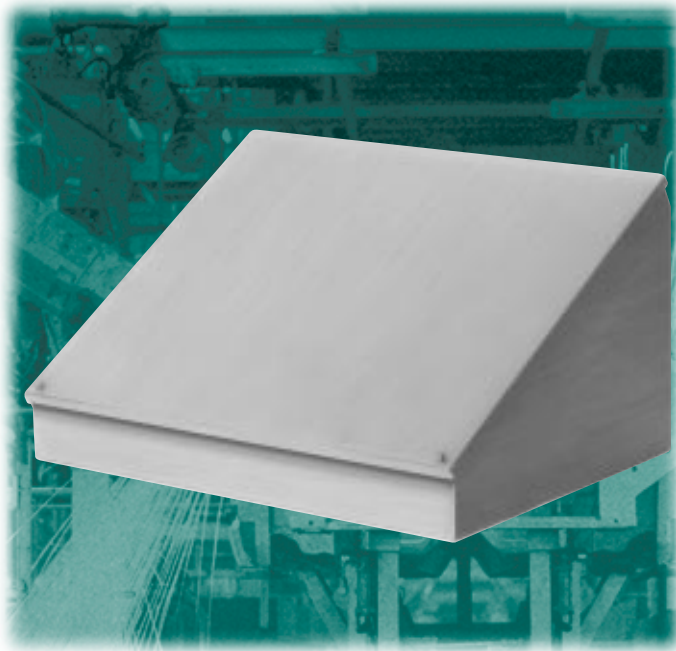
Part No.	Pushbutton Box			Accessories
	Outside dimensions (inches)			
	H	W	D	Oil tight hole seals
E 1PBGMS	3.25	2.75	3.50	See accessories section
E 2PBGMS	5.13	2.75	3.50	See accessories section
E 3PBGMS	7.00	2.75	3.50	See accessories section
E 4PBGMS	8.88	2.75	3.50	See accessories section
E 6PBGMS*	8.50	5.00	4.25	See accessories section

\* Can be mounted to a Rittal Electromate column and base.

Part No.	Pushbutton Box			Accessories
	Outside dimensions (inches)			
	H	W	D	Oil tight hole seals
E 1PBDSS	4.00	4.00	4.75	See accessories section
E 2PBDSS	6.00	4.00	4.75	See accessories section
E 3PBDSS	8.00	4.00	4.75	See accessories section
E 4PBDSS	10.00	4.00	4.75	See accessories section
E 4SPBDSS*	7.25	6.25	4.75	See accessories section
E 6PBDSS*	9.50	6.25	4.75	See accessories section

\* Can be mounted to a Rittal Electromate column and base.

# Consoles, Pedestals and Bases



## Stainless Steel Desk Units

These NEMA rated individual desk units are designed for indoor use to meet the requirements of most operator interface applications.

Control components such as meters, pushbuttons, pilot lights, and switches, can be mounted on the top-hinged control panel that slants 30° or 60°. Pedestal and base assemblies allow the desk units to be floor mounted. Wiring connections can be made through the base, the vertical column or directly to the desk unit.



## Configuration

### Console:

- Continuously welded seams, finished smooth
- Poron strip gasket
- Control panel slants 30° or 60° and is attached with a continuous steel hinge at top and secured with captive screws

### Pedestal/column:

- Removable, gasketed access plate in column body
- Urethane gasket

### Base:

- Pre-punched holes to accept column
- Two formed channels welded to underside of base

## Technical Specifications

### Material:

- *Console/desk unit:* 14 gauge Type 304 stainless steel
- *Pedestal/column:* 14 gauge Type 304 stainless steel with 10 gauge steel mounting flange at each end
- *Base:* 12 gauge Type 304 stainless steel

### Finish:

- *All stainless steel parts:* # 3 brushed polish

## Protection Ratings

NEMA Type  1  4  4X  12  13

## Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

## Technical Drawings

Pages ..... **NON 68-69**

Console			
Part No.	Outside dimensions (inches)		
	H	W	D
<b>Consoles</b>			
E 8C8SS	8.00	8.00	7.09
E 8C12SS	8.00	12.00	7.09
E 8C16SS	8.00	16.00	7.09
E 12C12SS	12.00	12.00	9.09
E 12C16SS	12.00	16.00	9.09
E 12C20SS	12.00	20.00	9.09
E 16C24SS	16.00	24.00	11.09
<b>Pedestals</b>			
E 44COLSS	4.00	4.00	-
E 66COLSS	6.00	6.00	-
<b>Bases</b>			
E 18SBASESS	18.00	18.00	-
E 24SBASESS	24.00	24.00	-

# CP/PC Operator Interface Solutions



## Stainless Steel Operator Interface Enclosures

### CP Enclosures And Pendant Arm Systems

The CP Pendant Arm System enclosures and support arms are made from a single piece of stainless steel, thereby ensuring optimum load capacity and hygiene. All edges are rounded for easy cleaning and safety. All enclosures, support arms, and components are made from Type 304 stainless steel with a brush finish.

### PC Type 4X Computer Enclosures

PC Series allow the monitor, CPU, keyboard, printer, and/or other components to be integrated into one cabinet that can provide the protection needed in harsh environments.

## Advantages

### CP Enclosures

- NEMA 1, 12/IP 66 protection
- Type 304 stainless steel construction
- Pre-installed mounting holes for CP enclosure couplings
- Top of enclosure is reinforced for increased load capacities
- Unibody construction
- Hinged front panel
- Food safe handgrips

### CP Pendant Arms

- NEMA 1, 12/IP 55 protection
- Maximum strength and stability through rugged stainless steel tube unibody construction
- Type 304 stainless steel construction
- Made-to-order
- Brush finish for hygiene applications

### PC Type 4X Enclosures

- NEMA 1, 4, 4X, 12/IP 66 protection
- Maximum strength and stability through unibody construction
- Type 304 stainless steel construction
- Fixed keyboard drawer
- Rear door
- Access to monitor section through special latching system
- Off-the-shelf availability
- Knife-edge design protects against liquid entry
- Foamed-on gasket
- Safety glass or polycarbonate viewing window options
- UL approved

## Configuration

### CP Enclosures

- Type 304 stainless steel body with cutout
- Front panel with installation hardware

### CP Pendant Arms

- Type 304 stainless steel
- One piece tube cut and bent to desired shape
- Brush finish

### PC Type 4X Enclosures

- Type 304 stainless steel body
- Rear door
- Solid bottom panel
- 2 front doors
  - top: monitor panel, right hand hinged
  - bottom: door, right hand hinged, with Ergoform-S lock system with double bit insert
- Foamed-on gasket

## Technical Specifications

### Material:

Type 304 stainless steel

### CP Enclosures

Housing: 18 ga/1.25 mm

Front plate: 14 ga/2 mm

### CP Pendant Arms

Outside diameter: 1.89"/48 mm

Wall thickness: 10 ga/3.6 mm

### PC Type 4X Enclosures

Housing: 16 ga/1.5 mm

Doors: 14 ga/2 mm

Viewing window: safety glass or polycarbonate

### Finish:

Exterior surfaces: brush finish

## Technical Drawings

Pages . . . . . **NON 70-71**

## Support Arm

Available in four versions:

- Straight
- U-shape
- Z-shape
- L-shape

In addition to the Part No., please indicate the required dimensions when ordering. Allow four weeks for delivery.

### Material:

Type 304 stainless steel

Outside diameter:

1.89"/48 mm

Wall thickness: 10 ga/3.6 mm

### Surface Finish:

brushed

### How to order example:

U-shape = CP 6660200

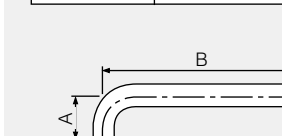
Dimension A = 300

Dimension B = 800

Dimension C = 240

### L-shape

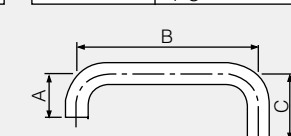
Part No.	+ A =
CP 6660100	+ B =



A<sub>min</sub> = B<sub>min</sub> = 9.45"/240 mm,  
B<sub>max</sub> = 59.05"/1500 mm

### U-shape

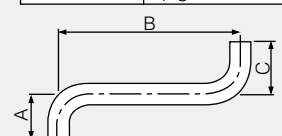
Part No.	+ A =
CP 6660200	+ B =
	+ C =



A<sub>min</sub> = C<sub>min</sub> = 9.45"/240 mm,  
B<sub>min</sub> = 16.14"/410 mm,  
B<sub>max</sub> = 59.05"/1500 mm

### Z-shape

Part No.	+ A =
CP 6660300	+ B =
	+ C =

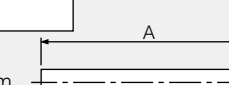


A<sub>min</sub> = C<sub>min</sub> = 9.45"/240 mm,  
B<sub>min</sub> = 16.14"/410 mm,  
B<sub>max</sub> = 59.05"/1500 mm

### Straight pipe

Part No.	+ A =
CP 6660000	

A<sub>min</sub> = 3.93"/100 mm,  
B<sub>max</sub> = 78.74"/2000 mm



### Permissible Loads For S/S Support Arms

Arm length in inch/mm (Dimension B)	Permissible static load
19.69"/500 mm	180 lbf/800 n
39.37"/1000 mm	90 lbf/400 n
59.06"/1500 mm	56 lbf/250 n

Part No.	NEMA rating	Enclosure						Accessories				Pendant arm couplings
		Exact dimensions						Pendant arms*				
		inches			mm			Straight	L-shape	U-shape	Z-shape	
H	W	D	H	W	D							
<b>CP Enclosures</b>												
6534010	1, 12	7.9	11.8	5.9	200	300	150	6660000	6660100	6660200	6660300	See accessories section
6535010	1, 12	11.8	11.8	5.9	300	300	150	6660000	6660100	6660200	6660300	See accessories section
6536010	1, 12	11.8	11.8	5.9	300	300	150	6660000	6660100	6660200	6660300	See accessories section
6538010	1, 12	15.7	15.7	5.9	400	400	150	6660000	6660100	6660200	6660300	See accessories section
6539010	1, 12	15.7	23.6	5.9	400	600	150	6660000	6660100	6660200	6660300	See accessories section

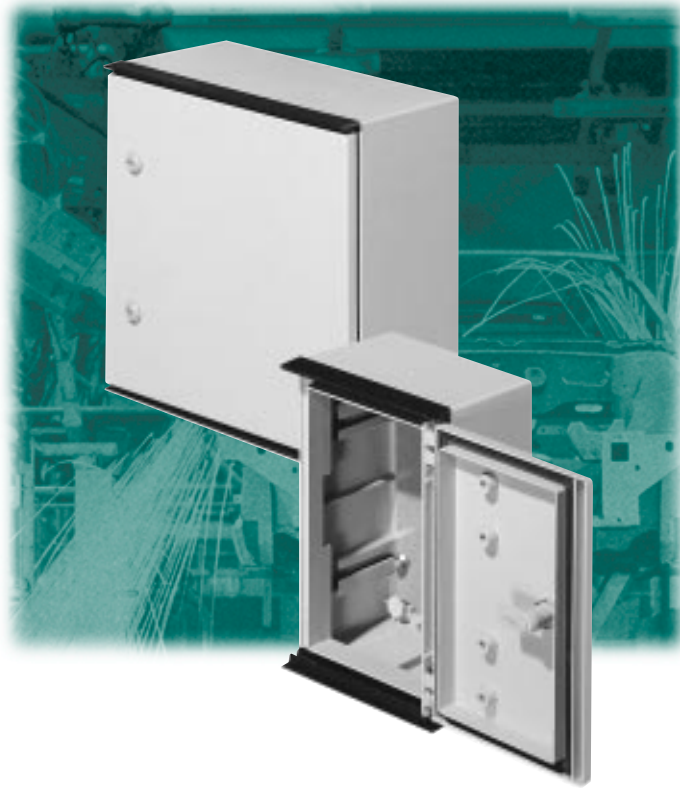
\* Refer to page NON 32 for pendant arm dimensional and ordering requirements.

Part No.	Configuration	Keyboard storage	Enclosure					
			Exact dimensions					
			inches			mm		
H	W	D	H	W	D			
<b>PC Type 4X Enclosures</b>								
4650304	Polycarbonate	Shelf	63	24	24	1600	600	600
4650305	Safety glass	Shelf	63	24	24	1600	600	600

Part No.	Accessories										
	Leveling feet		Shelf	Tower PC carriage			Inductive mouse (COM or PS/2)	Inductive mouse pad (COM)	Inductive mouse pad (PS/2)	Mouse pad support	Mouse holder
	Adjustable	Fixed		Carriage	Installation kit	Extra shelf					
<b>PC Type 4X Enclosures</b>											
4650304	2889000	2889000	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000
4650305	2889000	2889000	4619660	4641000	4376/4183/4162/9962544	4642000	6444500	6444000	6445000	2380000	2382000



# KS Fiberglass Enclosures



## NEMA Rated Fiberglass Enclosures

Rittal's corrosion resistant KS Series wallmount enclosures are made of fiberglass-reinforced unsaturated polyester. These fully insulated, fiberglass enclosures are appropriate for indoor/outdoor and harsh industrial environments. In addition, they are self-extinguishing per UL 94-VO and temperature resistant between -22° and 212°F.

### Configuration

- NEMA 1, 4, 4X, 12 protection/IP 66
- UL/CSA/TUV approvals
- Integrated rain protection strip at top and bottom edges of doors eliminates need for rain canopy
- Foamed-on gasket
- 180° stainless steel hinges
- Fixing nuts molded in backwall and door accept M6 threaded nuts for easy attachment of components
- C-sections molded in side walls allow infinite depth adjustment of mounting panels
- Mounting panel included
- Off-the-shelf availability

### Technical Specifications

#### Material:

- *Body and door:* fiberglass reinforced unsaturated polyester
- *Mounting panel:* hot-dipped galvanized zinc 14 ga/2 mm (KS 1432-1434) 12 ga/2.5 mm (KS 1444-1480)

#### Finish/color:

- *Body and door:* fiberglass, pigmented RAL 7032 pebble grey
- *Mounting panel:* Type M

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Pages** ..... **NON 72-73**

Part No.	Enclosure							Mounting Panel					
	Approximate outside dimensions H"xW"xD"	NEMA rating	Number of doors	Exact outside dimensions						Dimensions			
				inches			mm			inches		mm	
H	W	D	H	W	D	H	W	H	W				
<b>Without Viewing Window</b>													
1432600	14x10x6	1, 4, 4X, 12	1	13.78	9.84	5.91	350	250	150	11.81	7.68	300	195
1434600	16x12x8	1, 4, 4X, 12	1	15.75	11.81	7.87	400	300	200	13.78	9.65	350	245
1444600	16x16x8	1, 4, 4X, 12	1	15.75	15.75	7.87	400	400	200	13.78	13.58	350	345
1446600	24x16x8	1, 4, 4X, 12	1	23.62	15.75	7.87	600	400	200	21.65	13.58	550	345
1466600	24x24x8	1, 4, 4X, 12	1	23.62	23.62	7.87	600	600	200	21.65	21.46	550	545
1468600	32x24x12	1, 4, 4X, 12	1	31.50	23.62	11.81	800	600	300	29.53	20.35	750	517
1480600	40x32x12	1, 12	1	39.37	31.50	11.81	1000	800	300	37.40	28.23	950	717

Part No.	Accessories					
	Wallmounting bracket	Mounting panel adjustment bracket	Threaded insert nuts	Handles		Pole mount kit
				Thumb turn	Ergoform-S	
<b>Without Viewing Window</b>						
1432600	1483000	1481000	1482000	1484000	-	2584000
1434600	1483000	1481000	1482000	1484000	-	2584000
1444600	1483000	1481000	1482000	1484000	-	2584000
1446600	1483000	1481000	1482000	1484000	-	2584000
1466600	1483000	1481000	1482000	1484000	-	2584000
1468600	1483000	1491000	1482000	-	1490000	2584000
1480600	1483000	1491000	1482000	-	1490000	2584000



# Screw Cover Junction Boxes



## Legacy Fiberglass Junction Enclosures

These fiberglass junction boxes are designed primarily for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.



### Configuration

- Lift-off cover
- Stainless steel screw/retention chain
- Molded-in mounting provisions
- Rounded corners
- Overhang cover
- Foamed-in-place polyurethane gasketing

### Technical Specifications

#### Material:

- *Body and door:* hot compression molded fiberglass reinforced polyester
- *Optional mounting panel:* carbon steel

#### Finish/color:

- *Body and door:* fiberglass, pigmented light grey
- *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3  4X  12  6P

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Page** ..... **NON 74**

Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth J
	H	W	D	H	W	D		H	W	
L FJ604NFSC	7.50	5.43	4.75	5.84	3.85	4.45	L MPL64CS	4.875	2.875	4
L FJ606NFSC	7.50	7.50	4.75	5.72	5.72	4.45	L MPL66CS	4.875	4.875	4
L FJ806NFSC	9.62	7.50	4.74	7.73	5.74	4.45	L MPL86CS	6.875	4.875	4
L FJ1008NFSC	11.62	9.41	4.25	9.73	7.73	3.98	L MPL108CS	8.875	6.875	3.5
L FJ1210NFSC	13.56	11.43	5.21	11.79	9.80	4.94	L MPL1210CS	10.875	8.875	4.5
L FJ1412NFSC	15.50	13.50	6.25	13.53	11.55	5.94	L MPL1412CS	12.875	10.875	5.37
L FJ1614NFSC	17.53	15.46	6.23	15.63	13.60	5.94	L MPL1614CS	14.875	12.875	5.36
L FJ1816NFSC	19.62	17.61	8.82	17.69	15.69	8.45	L MPL1816CS	16.875	14.875	7.99
L FJ2016NFSC	22.00	17.68	8.83	19.72	15.72	8.45	L MPLJ2016CS	18.875	14.875	8

# Hinged Screw Cover Junction Boxes



## Legacy Fiberglass Junction Enclosures

These fiberglass junction boxes are designed primarily for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.

*These boxes are available in standard and extended depth versions.*



### Configuration

#### Standard Version:

- Full length stainless steel hinged cover
- Stainless steel screws
- 180° door opening
- Overhang cover
- Foamed-in-place polyurethane gasketing

#### Extended Depth Version:

- Full length stainless steel hinged cover
- Stainless steel screws
- 180° door opening
- Overhang cover
- Foamed-in-place polyurethane gasketing
- Extended depth cover available in 10 x 8 configuration only

### Technical Specifications

#### Material:

- *Body and door:* hot compression molded fiberglass reinforced polyester
- *Optional mounting panel:* carbon steel

#### Finish/color:

- *Body and door:* fiberglass, pigmented light grey
- *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3  4X  12  6P

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Page** ..... **NON 75**

Standard Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth J
	H	W	D	H	W	D		H	W	
L FJ604CHNFSC	7.50	5.47	6.22	5.84	3.85	5.95	L MPL64CS	4.875	2.875	4
L FJ606CHNFSC	7.50	7.50	4.75	5.72	5.72	4.45	L MPL66CS	4.875	4.875	4
L FJ806CHNFSC	9.62	7.50	4.74	7.73	5.74	4.45	L MPL86CS	6.875	4.875	4
L FJ1008CHNFSC	11.62	9.41	4.25	9.73	7.73	3.98	L MPL108CS	8.875	6.875	3.5
L FJ1210CHNFSC	13.56	11.43	5.21	11.79	9.80	4.94	L MPL1210CS	10.875	8.875	4.5
L FJ1412CHNFSC	15.50	13.50	6.25	13.53	11.55	5.94	L MPL1412CS	12.875	10.875	5.37
L FJ1614CHNFSC	17.53	15.46	6.23	15.63	13.60	5.94	L MPL1614CS	14.875	12.875	5.36
L FJ1816CHNFSC	19.62	17.61	8.82	17.69	15.69	8.45	L MPL1816CS	16.875	14.875	7.99
L FJ2016CHNFSC	22.00	17.68	8.83	19.72	15.72	8.45	L MPLJ2016CS	18.875	14.875	8

Extended Depth Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth J
	H	W	D	H	W	D		H	W	
L FJ604CHNFSCX	7.50	5.47	6.22	5.84	3.85	5.95	L MPL64CS	4.875	2.875	5.49
L FJ606CHNFSCX	7.50	7.52	6.22	5.72	5.72	5.95	L MPL66CS	4.875	4.875	5.49
L FJ806CHNFSCX	9.62	7.46	6.22	7.73	5.74	5.95	L MPL86CS	6.875	4.875	5.49
L FJ1008CHNFSCX	11.62	9.37	6.61	9.73	7.73	6.36	L MPL108CS	8.875	6.875	5.91
L FJ1210CHNFSCX	13.56	11.43	6.61	11.79	9.80	6.32	L MPL1210CS	10.875	8.875	5.87
L FJ1412CHNFSCX	15.50	13.38	7.69	13.53	11.55	7.45	L MPL1412CS	12.875	10.875	6.87
L FJ1614CHNFSCX	17.53	15.43	7.71	15.63	13.60	7.45	L MPL1614CS	14.875	12.875	6.87
L FJ1816CHNFSCX	19.62	17.48	10.62	17.69	15.69	10.31	L MPL1816CS	16.875	14.875	9.86
L FJ2016CHNFSCX	22.00	17.56	10.64	19.72	15.72	10.33	L MPLJ2016CS	18.875	14.875	9.87

# Lockable Quick Release Junction Boxes



## Legacy Fiberglass Junction Enclosures

These fiberglass junction boxes are designed primarily for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.

*These boxes are available in standard and extended depth versions.*



### Configuration

- Quick-release clamps with secure loop for padlock provisions (padlock not included)
- Can be lifted and released with ease
- 180° door opening
- Foamed-in-place polyurethane gasketing

### Technical Specifications

#### Material:

- *Body and door:* hot compression molded fiberglass reinforced polyester
- *Optional mounting panel:* carbon steel

#### Finish/color:

- *Body and door:* fiberglass, pigmented light grey
- *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3  4X  12  6P

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **NON 76**

Standard Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D	H	W	D		H	W	
L FJ604CHNFQ	7.50	5.43	4.75	5.84	3.85	4.45	L MPL64CS	4.875	2.875	4
L FJ606CHNFQ	7.50	7.50	4.75	5.72	5.72	4.45	L MPL66CS	4.875	4.875	4
L FJ806CHNFQ	9.62	7.50	4.74	7.73	5.74	4.45	L MPL86CS	6.875	4.875	4
L FJ1008CHNFQ	11.62	9.41	4.25	9.73	7.73	3.98	L MPL108CS	8.875	6.875	3.5
L FJ1210CHNFQ	13.56	11.43	5.21	11.79	9.80	4.94	L MPL1210CS	10.875	8.875	4.5
L FJ1412CHNFQ	15.50	13.50	6.25	13.53	11.55	5.94	L MPL1412CS	12.875	10.875	5.37
L FJ1614CHNFQ	17.53	15.46	6.23	15.63	13.60	5.94	L MPL1614CS	14.875	10.875	5.36
L FJ1816CHNFQ	19.62	17.61	8.82	17.69	15.69	8.45	L MPL1816CS	16.875	14.875	7.99
L FJ2016CHNFQ	22.00	17.68	8.83	19.72	15.72	8.45	L MPLJ2016CS	18.875	14.875	8

Extended Depth Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D	H	W	D		H	W	
L FJ604CHNFQX	7.50	5.47	6.22	5.84	3.85	5.95	L MPL64CS	4.875	2.875	5.49
L FJ606CHNFQX	7.50	7.52	6.22	5.72	5.72	5.95	L MPL66CS	4.875	4.875	5.49
L FJ806CHNFQX	9.62	7.46	6.22	7.73	5.74	5.95	L MPL86CS	6.875	4.875	5.49
L FJ1008CHNFQX	11.62	9.37	6.61	9.73	7.73	6.36	L MPL108CS	8.875	6.875	5.91
L FJ1210CHNFQX	13.56	11.43	6.61	11.79	9.80	6.32	L MPL1210CS	10.875	8.875	5.87
L FJ1412CHNFQX	15.50	13.38	7.69	13.53	11.55	7.45	L MPL1412CS	12.875	10.875	6.87
L FJ1614CHNFQX	17.53	15.43	7.71	15.63	13.60	7.45	L MPL1614CS	14.875	12.875	6.87
L FJ1816CHNFQX	19.62	17.48	10.62	17.69	15.69	10.31	L MPL1816CS	16.875	14.875	9.86
L FJ2016CHNFQX	22.00	17.56	10.64	19.72	15.72	10.33	L MPLJ2016CS	18.875	14.875	9.87

# Flush Viewing Window Junction Boxes



## Legacy Fiberglass Junction Enclosures

These fiberglass junction boxes are designed primarily for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.



### Configuration

- Scratch and abrasion resistant UVA acrylic flush viewing window
- Quick-release clamps with secure loop for padlock provisions (padlock not included)
- Can be lifted and released with ease
- 180° door opening
- Foamed-in-place polyurethane gasketing

### Technical Specifications

#### Material:

- *Body and door:* hot compression molded fiberglass reinforced polyester
- *Optional mounting panel:* carbon steel

#### Finish/color:

- *Body and door:* fiberglass, pigmented light grey
- *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3  4X  12  6P

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **NON 77**

Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D	H	W	D		H	W	
L FJ806CHNFQW	9.62	7.50	4.74	7.73	5.74	4.45	L MPL86CS	6.875	4.875	4
L FJ1008CHNFQW	11.62	9.41	4.25	9.73	7.73	3.98	L MPL108CS	8.875	6.875	3.5
L FJ1210CHNFQW	13.56	11.43	5.21	11.79	9.80	4.94	L MPL1210CS	10.875	8.875	4.5
L FJ1412CHNFQW	15.50	13.50	6.25	13.53	11.55	5.94	L MPL1412CS	12.875	10.875	5.37
L FJ1614CHNFQW	17.53	15.46	6.23	15.63	13.60	5.94	L MPL1614CS	14.875	12.875	5.36
L FJ1816CHNFQW	19.62	17.61	8.82	17.69	15.69	8.45	L MPL1816CS	16.875	14.875	7.99
L FJ2016CHNFQW	22.00	17.68	8.83	19.72	15.72	8.45	L MPLJ2016CS	18.875	14.875	8



# Hinged Screw Cover Instrumentation Boxes



## Legacy Fiberglass Instrumentation Enclosures

These fiberglass instrumentation boxes are designed primarily for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation. These boxes are ideal for the OEM looking for a housing with stylish protection.

*These boxes are available in hinged screw cover and viewing window versions.*



### Configuration

#### Hinged Screw Cover Version:

- Integrally hinged cover that secures with two screws
- Stainless steel screw recessed from cover
- 180° door opening

#### Viewing Window Version:

- Scratch and abrasion resistant UVA acrylic flush viewing window
- Integrally hinged cover secures with two screws
- Stainless steel screw recessed from cover
- 180° door opening
- Foamed-in-place polyurethane gasketing

### Technical Specifications

#### Material:

- *Body and door:* hot compression molded fiberglass reinforced polyester
- *Optional mounting panel:* carbon steel

#### Finish/color:

- *Body and door:* fiberglass, pigmented light grey
- *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Page** ..... **NON 77**

# Hinged Quick Release Instrumentation Boxes



## Legacy Fiberglass Instrumentation Enclosures

These fiberglass instrumentation boxes are designed primarily for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation. These boxes are ideal for the OEM looking for a housing with stylish protection.



### Configuration

- Quick-release clamps with secure loop for padlock provisions (padlock not included)
- Can be lifted and released with ease
- 180° door opening
- Foamed-in-place polyurethane gasketing

### Technical Specifications

#### Material:

- *Body and door:* hot compression molded fiberglass reinforced polyester
- *Optional mounting panel:* carbon steel

#### Finish/color:

- *Body and door:* fiberglass, pigmented light grey
- *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Page** ..... **NON 78**

Hinged Screw Cover Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D	H	W	D		H	W	
L FI707CHNFSC	7.21	7.21	5.09	6.65	6.65	4.84	L MPL66CS	4.875	4.875	4.39
L FI907CHNFSC	9.21	7.21	5.09	8.59	6.59	4.84	L MPL86CS	6.875	4.875	4.39
L FI1109CHNFSC	11.21	9.21	6.09	10.59	8.59	5.84	L MPL108CS	8.875	6.875	5.39
L FI1311CHNFSC	13.21	11.21	6.59	12.59	10.59	6.34	L MPL1210CS	10.875	8.875	5.89
L FI1513CHNFSC	15.21	13.21	7.09	14.55	12.55	6.84	L MPL1412CS	12.875	10.875	6.39

Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D	H	W	D		H	W	
L FI707CHNFQ	7.21	7.21	5.09	6.65	6.65	4.84	L MPL66CS	4.875	4.875	4.39
L FI907CHNFQ	9.21	7.21	5.09	8.59	6.59	4.84	L MPL86CS	6.875	4.875	4.39
L FI1109CHNFQ	11.21	9.21	6.09	10.59	8.59	5.84	L MPL108CS	8.875	6.875	5.39
L FI1311CHNFQ	13.21	11.21	6.59	12.59	10.59	6.34	L MPL1210CS	10.875	8.875	5.89
L FI1513CHNFQ	15.21	13.21	7.09	14.55	12.55	6.84	L MPL1412CS	12.875	10.875	6.39

Viewing Window Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D	H	W	D		H	W	
L FI707CHNFSCW	7.21	7.21	5.09	6.65	6.65	4.84	L MPL66CS	4.875	4.875	4.39
L FI907CHNFSCW	9.21	7.21	5.09	8.59	6.59	4.84	L MPL86CS	6.875	4.875	4.39
L FI1109CHNFSCW	11.21	9.21	6.09	10.59	8.59	5.84	L MPL108CS	8.875	6.875	5.39
L FI1311CHNFSCW	13.21	11.21	6.59	12.59	10.59	6.34	L MPL1210CS	10.875	8.875	5.89
L FI1513CHNFSCW	15.21	13.21	7.09	14.55	12.55	6.84	L MPL1412CS	12.875	10.875	6.39



# NEMA 4X Wallmount Boxes



## Legacy Fiberglass Wallmount Enclosures

These fiberglass wallmount boxes are designed primarily for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.



### Configuration

- Rigid body construction and watertight seal
- Foamed-in-place polyurethane gasketing
- Integral mounting brackets
- Molded-in panel mounting inserts
- Built-in padlock hasp

### Technical Specifications

- Material:**
- *Body and door:* hot compression molded fiberglass reinforced polyester
  - *Optional mounting panel:* carbon steel
- Finish/color:**
- *Body and door:* fiberglass, pigmented light grey
  - *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **NON 78**

Part No.	Enclosure						Mounting Panel			
	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D	H	W	D		H	W	
L FW20H1612	22.75	16.87	13.77	19.70	16.04	13.24	L MPL2016CS	17.00	13.00	12.26
L FW24H2008	27.00	21.24	9.90	24.05	20.39	9.25	L MPL2420CS	21.00	17.00	8.25
L FW24H2410	27.00	25.24	11.90	24.05	24.39	11.25	L MPL2424CS	21.00	21.00	10.25
L FW24H2412	27.00	25.24	13.90	24.05	24.39	13.25	L MPL2424CS	21.00	21.00	12.25
L FW30H2008	32.86	20.99	9.89	29.90	20.14	9.23	L MPL3020CS	27.00	17.00	8.23
L FW30H2407	33.41	26.32	8.81	30.46	25.47	8.12	L MPL3024CS	27.00	21.00	7.12
L FW30H2410	33.41	26.32	11.95	30.46	25.47	11.27	L MPL3024CS	27.00	21.00	10.27
L FW36H3010	39.31	32.50	12.05	36.31	31.69	11.36	L MPL3630CS	33.00	27.00	10.36
L FW36H3012	39.31	32.50	14.05	36.31	31.69	13.36	L MPL3630CS	33.00	27.00	12.36
L FW48H3612	51.29	36.62	13.93	48.33	36.22	13.25	L MPL4836CS	45.00	33.00	12.25
L FW48H3616	51.29	36.62	17.93	48.33	36.22	17.25	L MPL4836CS	45.00	33.00	16.25



# NEMA 3R Wallmount Boxes



## Legacy Fiberglass Wallmount Enclosures

These fiberglass wallmount boxes are designed primarily for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.



### Configuration

- Rainshield top for water protection
- Rigid body construction and watertight seal
- Integral mounting feet for ease of installation
- Molded-in panel mounting inserts
- Built-in padlock hasp

### Technical Specifications

- Material:**
- *Body and door:* hot compression molded fiberglass reinforced polyester
  - *Optional mounting panel:* carbon steel
- Finish/color:**
- *Body and door:* fiberglass, pigmented light grey
  - *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3R  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **NON 79**

Part No.	Enclosure						Mounting Panel			
	Outside dimensions (inches)			Inside dimensions (inches)			Part No.	Panel size		Usable depth
	H	W	D	H	W	D		H	W	
L FW20R1612HCR	22.75	16.87	14.27	19.70	16.04	13.24	L MPL2016CS	17.00	13.00	12.26
L FW24R2008HCR	27.00	21.24	9.90	24.05	20.39	9.25	L MPL2420CS	21.00	17.00	8.25
L FW24R2410HCR	27.00	25.24	11.90	24.05	24.39	11.25	L MPL2424CS	21.00	21.00	10.25
L FW30R2410HCR	33.41	26.32	11.95	30.46	25.47	11.27	L MPL3024CS	27.00	21.00	12.25
L FW30R2412HCR	33.41	26.32	13.79	30.46	25.47	13.10	L MPL3024CS	27.00	21.00	8.23
L FW36R3010HCR	39.31	32.50	12.05	36.31	31.69	11.36	L MPL3630CS	33.00	27.00	7.12
L FW36R3012HCR	39.31	32.50	14.05	36.31	31.69	13.36	L MPL3630CS	33.00	27.00	10.27
L FW48R3612HCR	51.29	36.62	14.43	48.33	36.22	13.25	L MPL4836CS	45.00	33.00	10.36
L FW48R3616HCR	51.29	36.62	18.43	48.33	36.22	17.25	L MPL4836CS	45.00	33.00	12.36



# Fiberglass Wallmount Boxes



## Legacy Fiberglass FMD Enclosures

Rittal Electromate wallmount disconnect enclosures accept all standard available disconnects and circuit breakers, including:

- Square D non-fusible disconnects
- Square D fusible disconnects
- Allen Bradley non-fusible disconnects
- Allen Bradley fusible disconnects
- General Electric non-fusible disconnects
- General Electric fusible disconnects



### Configuration

- Environmentally sealed disconnect
- Foamed-in-place polyurethane gasketing
- Rigid body construction and watertight seal
- Molded-in panel mounting inserts
- Integral mounting brackets for ease of installation

### Technical Specifications

**Material:**

- *Body and door:* hot compression molded fiberglass reinforced polyester
- *Optional mounting panel:* carbon steel

**Finish/color:**

- *Body and door:* fiberglass, pigmented light grey
- *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3  4X  12  3R

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Page** ..... **NON 80**

Part No.	Enclosure			Mounting Panel			Part No.	Panel size		Usable depth
	Outside dimensions (inches)			Inside dimensions (inches)				H	W	
L F16HS10	18.75	10.96	10.25	15.92	10.27	8.53	L MPL1610CD	13.00	8.50	7.8
L F20HS16	22.75	16.87	11.00	19.70	16.04	9.24	L MPL2016CD	16.875	13.375	8.26
L F24HS24	27.00	25.24	13.19	24.05	24.39	11.25	L MPL2424CD	20.875	21.375	10.25
L F30HS24	33.41	26.32	13.19	30.46	25.47	11.27	L MPL3024CD	26.875	21.375	10.27
L F36HS30	39.31	32.50	13.31	36.31	31.69	11.36	L MPL3630CD	32.875	27.375	10.36

# NEMA 4X Freestanding Boxes



## Legacy Fiberglass Freestanding Enclosures

These fiberglass freestanding boxes are designed primarily for indoor or outdoor use and can be used for many different applications. They protect installed equipment against splashing water, seepage of water, falling or hose directed water and severe external condensation.



### Configuration

- Rigid body construction and water resistant seal
- Foamed-in-place polyurethane gasketing
- Wallmount or freestanding models available
- Molded-in panel mounting inserts or studs
- Eyebolts and crossbar construction
- Built-in padlock hasp

### Technical Specifications

**Material:**

- *Body and door:* hot compression molded fiberglass reinforced polyester
- *Optional mounting panel:* carbon steel

**Finish/color:**

- *Body and door:* fiberglass, pigmented light grey
- *Optional mounting panel:* painted white

### Protection Ratings

**NEMA Type**  1  3  4X  12  3R

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Page** ..... **NON 81**

Part No.	Enclosure			Mounting Panel			Part No.	Panel Size		Usable depth
	Outside dimensions (inches)			Inside dimensions (inches)				H	W	
L F60H3612	63.50	36.50	14.12	60.13	36.13	13.44	L MPL6036CS	57.00	33.00	12.44
L F60H3616	63.50	36.50	18.12	60.13	36.13	17.44	L MPL6036CS	57.00	33.00	16.44
L F72H2525FS	72.50	25.50	26.38	72.00	25.00	25.75	L MPL7225CS	64.00	21.00	24.74
L F72H4925FSDD	72.50	49.50	26.38	72.00	49.00	25.75	L MPL7249CS	64.00	22.00	24.74

# 30/22 mm Pushbutton Enclosures



## Legacy Fiberglass Pushbutton Boxes

These fiberglass boxes are designed for indoor and outdoor use to house pushbuttons, selector switches, pilot lights and more and to protect such equipment against dirt, dust, and spraying of water, oil or coolant.



### Configuration

- Lift-off cover
- Recessed captive stainless steel screws to hold cover
- Notched key hole design
- Metal grounding strap provided
- External mounting brackets available
- Foamed-in-place polyurethane gasketing

### Technical Specifications

- Material:**
- *Body and door:* hot compression molded fiberglass reinforced polyester
- Finish/color:**
- *Body and door:* fiberglass, pigmented light grey

### Protection Ratings

**NEMA Type**  1  3  4X  12  6P

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 82

30 mm Enclosure						
Part No.	Outside dimensions (inches)			Inside dimensions (inches)		
	H	W	D	H	W	D
L F1PB	6.63	3.81	3.89	6.00	3.19	3.63
L F2PB	6.63	3.81	3.89	6.00	3.19	3.63
L F3PB	8.88	3.81	3.89	8.26	3.19	3.63
L F4PB	11.13	3.81	3.89	10.51	3.19	3.63
L F5PB	13.78	3.63	3.14	13.19	3.03	2.87

22 mm Enclosure						
Part No.	Outside dimensions (inches)			Inside dimensions (inches)		
	H	W	D	H	W	D
L F1PBG	6.63	3.81	3.89	6.00	3.19	3.63
L F2PBG	6.63	3.81	3.89	6.00	3.19	3.63
L F3PBG	6.63	3.81	3.89	6.00	3.19	3.63
L F4PBG	8.88	3.81	3.89	8.26	3.19	3.63
L F5PBG	11.13	3.81	3.89	10.51	3.19	3.63

# Small Box Pushbutton Enclosures



## Legacy Fiberglass Pushbutton Boxes

These fiberglass boxes are designed for indoor and outdoor use to house pushbuttons, selector switches, pilot lights and more and to protect such equipment against dirt, dust, and spraying of water, oil or coolant.



### Configuration

- Lift-off cover
- Continuous polyurethane cover gasket
- Small raised beveled cover flush with enclosure sides
- Recessed captive stainless steel screws
- External mounting brackets available
- Foamed-in-place polyurethane gasketing

### Technical Specifications

- Material:**
- *Body and door:* hot compression molded fiberglass reinforced polyester
- Finish/color:**
- *Body and door:* fiberglass, pigmented light grey

### Protection Ratings

**NEMA Type**  1  3  4X  12  6P

### Certifications/Approvals

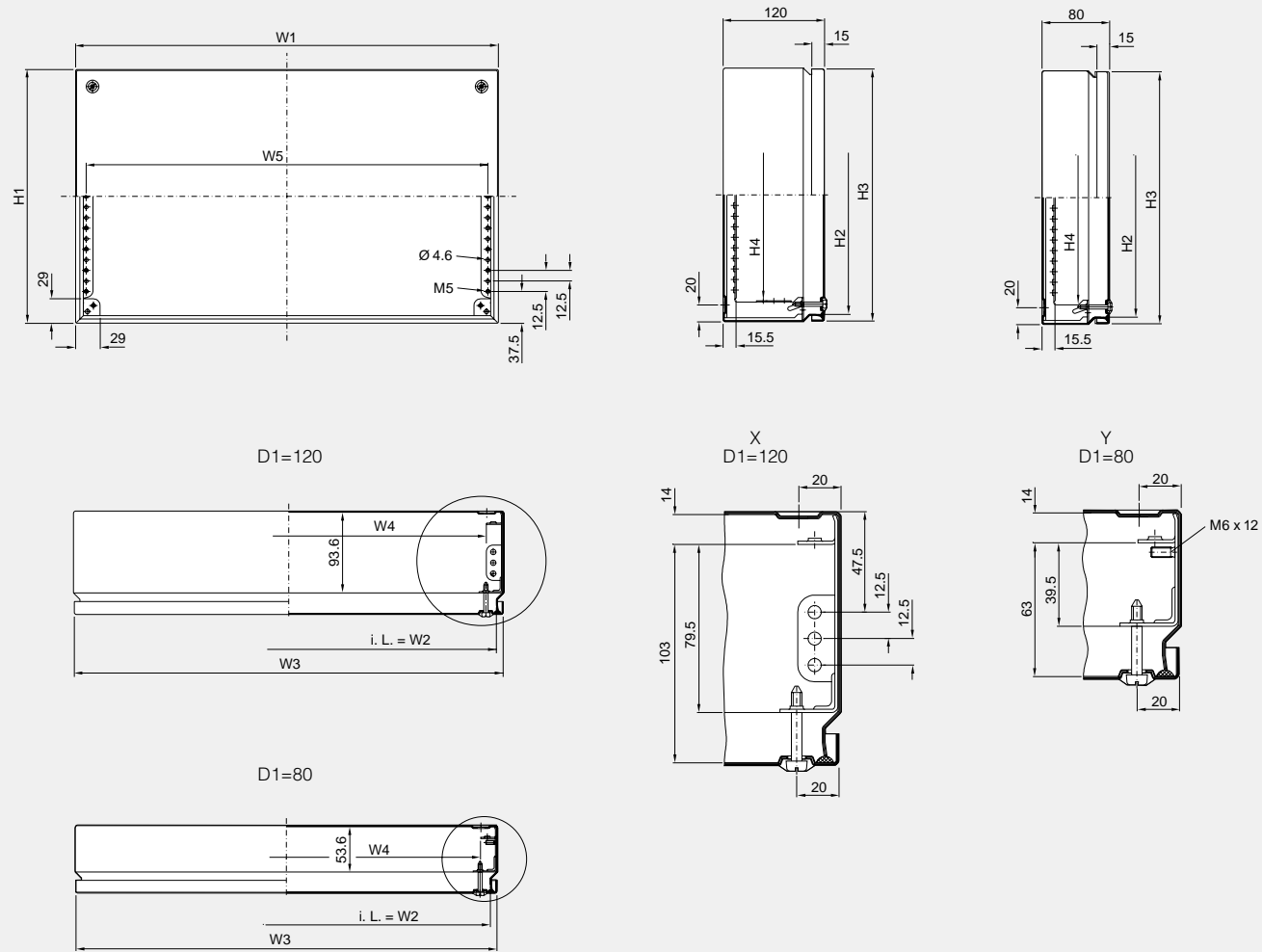
**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... NON 83

Enclosure						
Part No.	Outside dimensions (inches)			Inside dimensions (inches)		
	H	W	D	H	W	D
L FJ332HB	3.72	3.63	2.95	3.13	3.03	2.70
L FJ532HB	5.97	3.63	3.14	5.38	3.03	2.87
L FJ644HB	6.63	3.81	3.89	6.00	3.19	3.63
L FJ844HB	8.88	3.81	3.89	8.26	3.19	3.63
L FJ1144HB	11.13	3.81	3.89	10.51	3.19	3.63

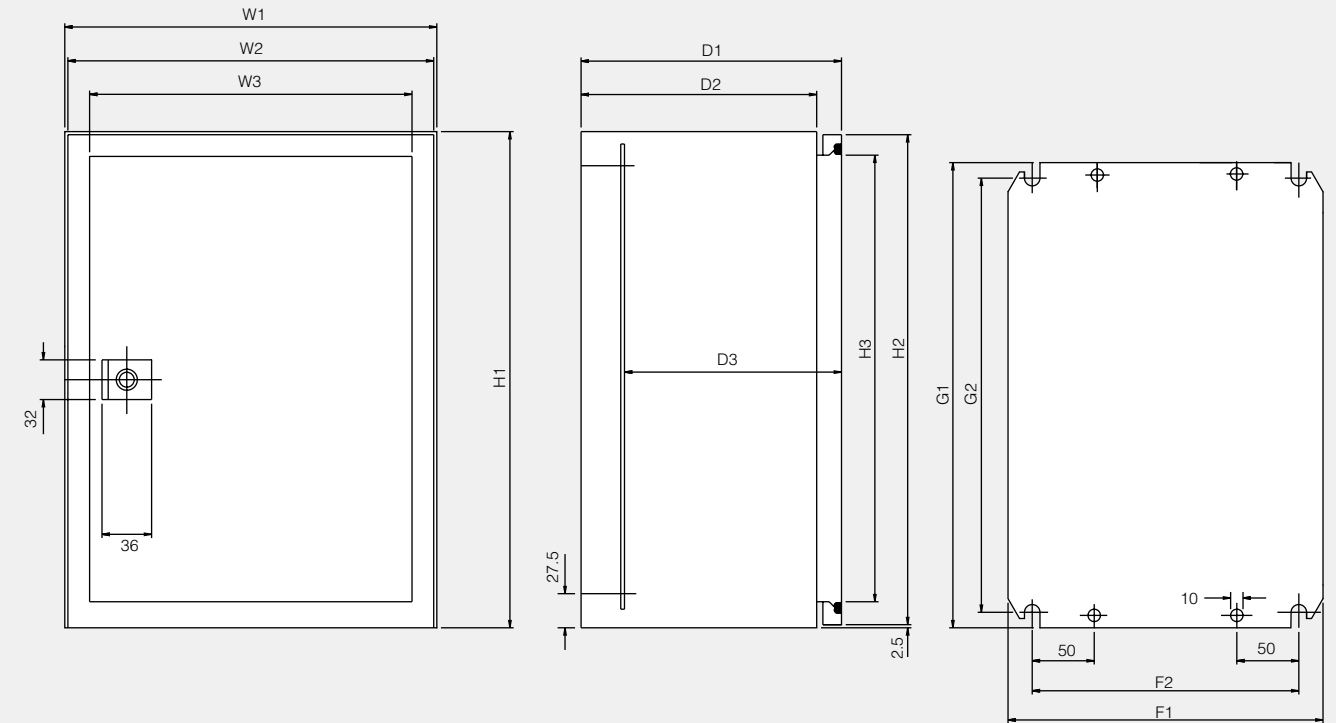
### Technical Specifications KL Junction Boxes



Enclosure						
Height (H1)	inches	5.91	5.91	7.87	7.87	7.87
	mm	150	150	200	200	200
Width (W1)	inches	5.91	11.81	7.87	11.81	15.75
	mm	150	300	200	300	400
Depth (D)	inches	3.15	3.15	3.15	3.15	4.72
	mm	80	80	80	80	120
<b>Part No.</b>		<b>1521010</b>	<b>1522010</b>	<b>1523010</b>	<b>1524010</b>	<b>1525010</b>
H2		132	132	182	182	182
H3		148	148	198	198	198
H4		100	100	150	150	150
W2		132	282	182	282	382
W3		148	298	198	298	398
W4		109	259	159	259	359
W5		125	275	175	275	375
Weight	lbs.	2.9	4.0	4.0	5.3	7.9
	kg	1.3	1.8	1.8	2.4	3.6

Dimensions in millimeters (mm) unless otherwise indicated.

### Technical Specifications EB Junction Boxes

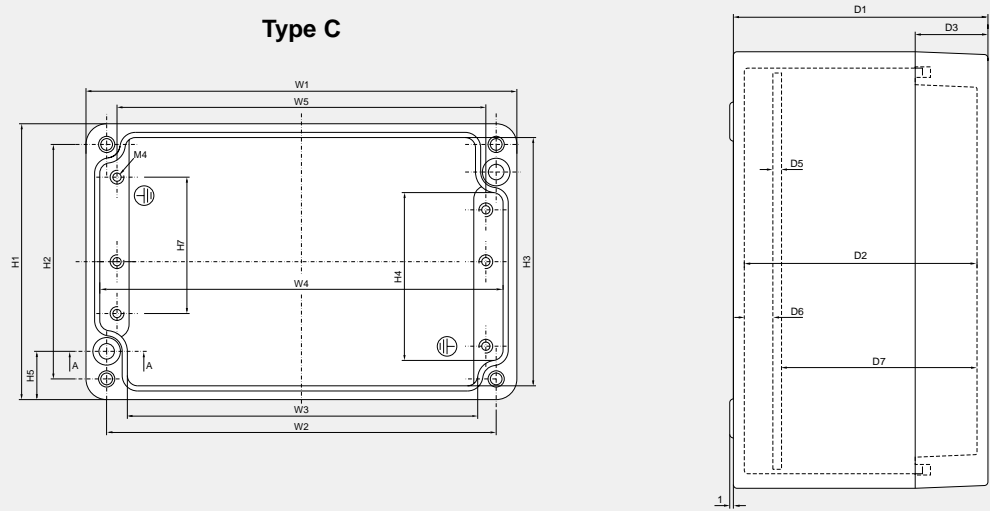


Enclosure						
Height (H1)	inches	5.91	9.84	11.81	13.78	15.75
	mm	150	250	300	350	400
Width (W1)	inches	5.91	7.87	9.84	11.81	13.78
	mm	150	200	250	300	350
Depth (D)	inches	4.72	5.91	5.91	5.91	5.91
	mm	120	150	150	150	150
<b>Part No.</b>		<b>1597600</b>	<b>1597620</b>	<b>1597630</b>	<b>1597540</b>	<b>1597550</b>
H2		145	245	295	345	395
H3		124	224	274	310	360
W2		145	195	245	295	345
W3		117	167	210	260	310
D2		100	130	130	130	130
D3		100	130	130	130	130
F1		112	162	204	254	304
F2		72	122	165	215	265
G1		125	225	275	325	375
G2		110	210	260	300	350
Weight	lbs.	5.5	7.9	9.9	13.2	16.5
	kg	2.5	3.6	4.5	6.0	7.5

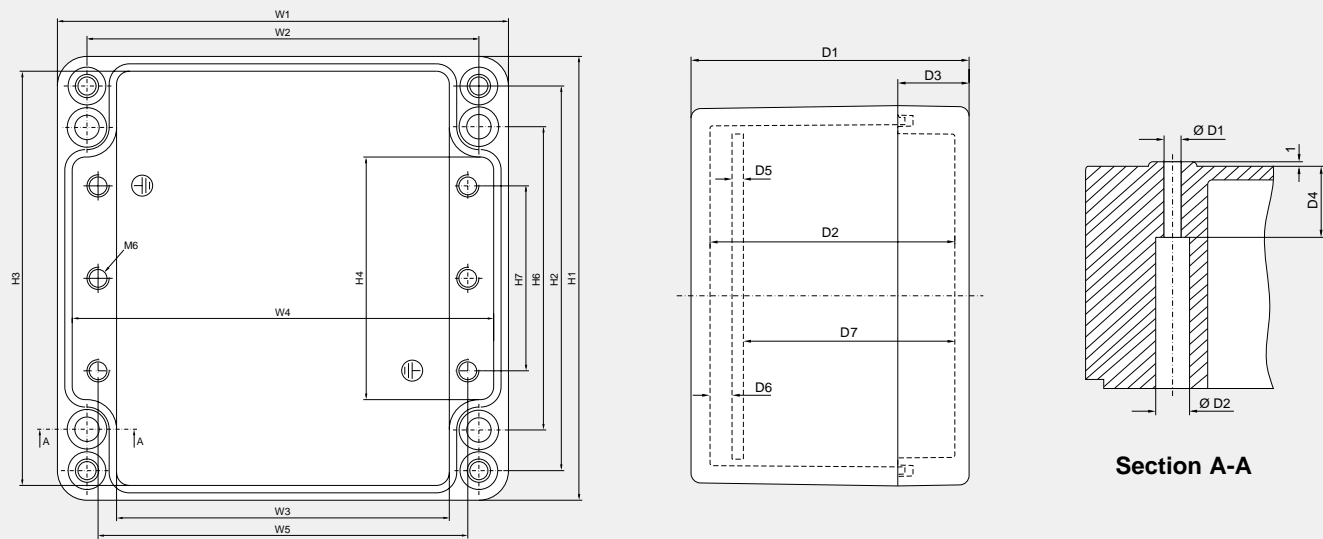
Dimensions in millimeters (mm) unless otherwise indicated.

**Technical Specifications**  
GA Cast Aluminum Enclosures

**Type C**



**Type D**

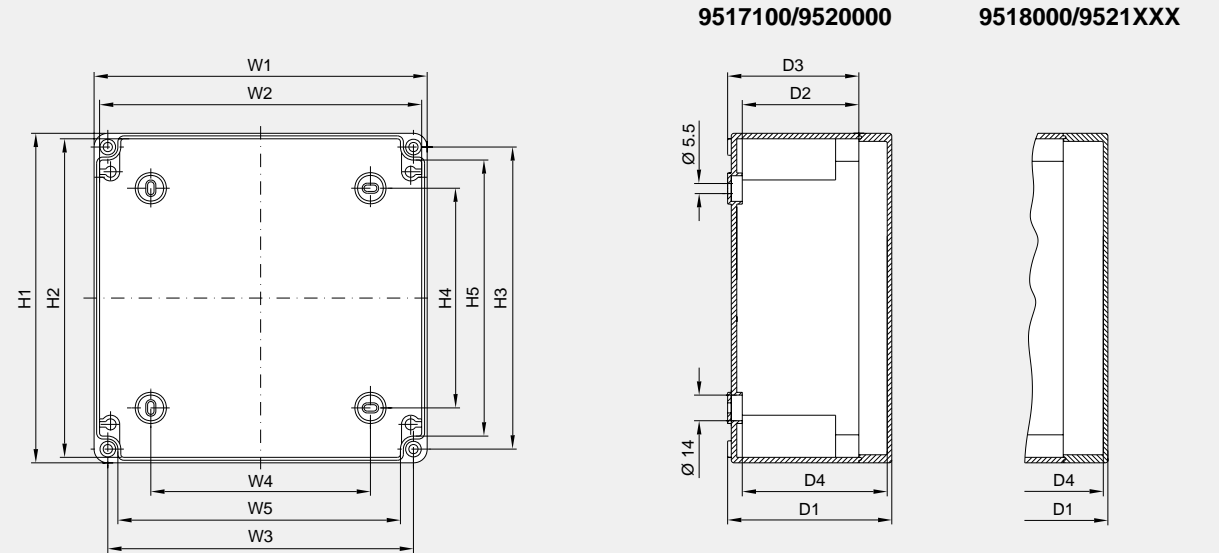
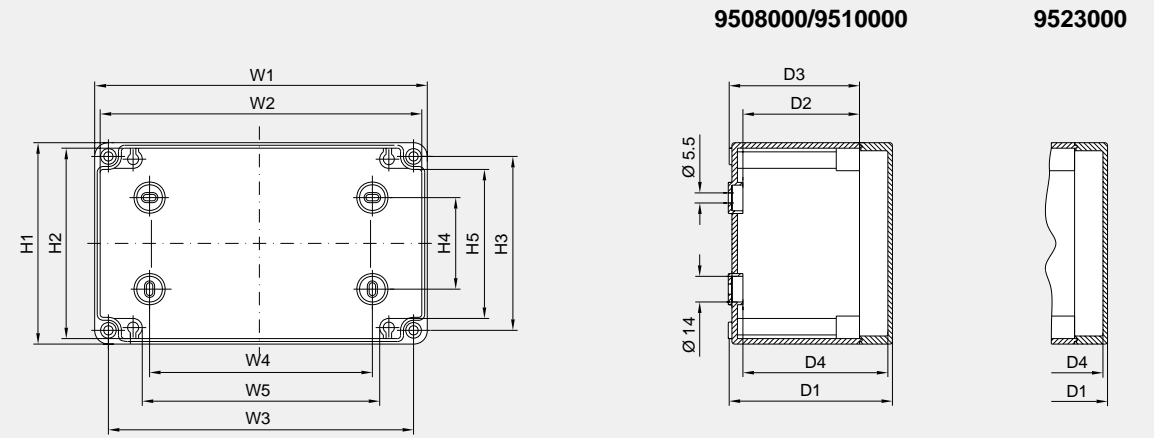


**Section A-A**

Enclosure																						
Part No.	Type	Height dimensions							Width dimensions					Depth dimensions						Diameter		
		H1	H2	H3	H4	H5	H6	H7	W1	W2	W3	W4	W5	D1	D2	D3	D4	D5	D6	D7	ØD1	ØD2
9104210	C	80	68	70	48	14	-	40	75	63	52	67	57	57	50	15	11.5	-	-	-	4.5	9
9105210	C	80	68	72	48	14	-	40	125	113	99	17	107	57	50	15	10	1.5	7	41.5	4.5	8.5
9106210	C	80	68	72	48	14	-	40	175	163	152	167	157	57	50	15	10.5	1.5	6	42.5	4.5	9
9108210	D	120	104	111	66	-	82	52	122	106	90	113	95	80	72	30	14.5	1.5	9	61.5	6.5	10.8
9110210	D	120	104	111	66	-	82	52	122	106	90	113	95	80	72	30	15	1.5	9	69.5	6.8	11
9112210	D	160	140	151	90	-	110	76	160	140	120	151	130	90	82	20	20.5	2	9	71	6.2	12.5
9113210	D	160	140	151	90	-	110	76	160	140	120	151	130	90	82	20	18	2	9	71	6.3	14
9119210	D	230	210	221	160	-	180	144	330	310	290	321	300	180	172	20	14	2	10	160	7.5	12.5

Dimensions in millimeters (mm) unless otherwise indicated.

**Technical Specifications**  
PK Polycarbonate Enclosures

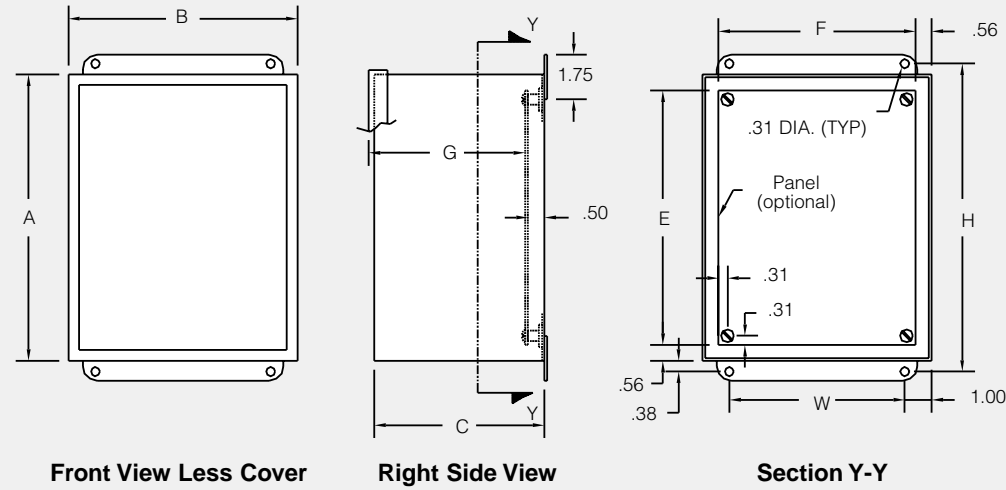


Enclosure							
Height (H1)	inches	3.70	5.12	7.09	7.09	7.09	10.00
	mm	94	130	180	180	180	254
Width (W1)	inches	5.12	5.12	7.17	7.17	10.00	14.17
	mm	130	130	182	182	254	360
Depth (D1)	inches	2.24	2.95	3.54	4.37	3.54	4.37
	mm	57	75	90	111	90	111
Part No.*		<b>9508</b>	<b>9510</b>	<b>9517</b>	<b>9518</b>	<b>9520</b>	<b>9521</b>
Grey cover*		.../000	.../000	—	.../000	.../000	.../000
Transparent cover*		—	—	.../100	—	—	.../100
Packs of		4	4	1	1	1	1
H2		104	88	175	175	247	355
H3		95	79	167	167	239	346
H4		65	50	120	120	190	240
H5		80	64	152	152	224	309
W2		104	174	173	173	173	248
W3		95	165	165	165	165	239
W4		65	120	120	120	120	190
W5		80	150	128	128	128	224
D2		42	33	63	63	63	63
D3		50	41	71	71	71	71
D4		53	45	75	97	75	97

Dimensions in millimeters (mm) unless otherwise indicated.



### Technical Specifications Continuous Hinge Cover Enclosures



Front View Less Cover

Right Side View

Section Y-Y

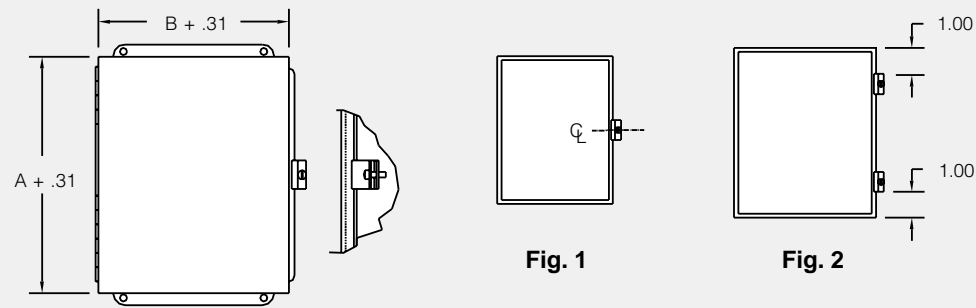
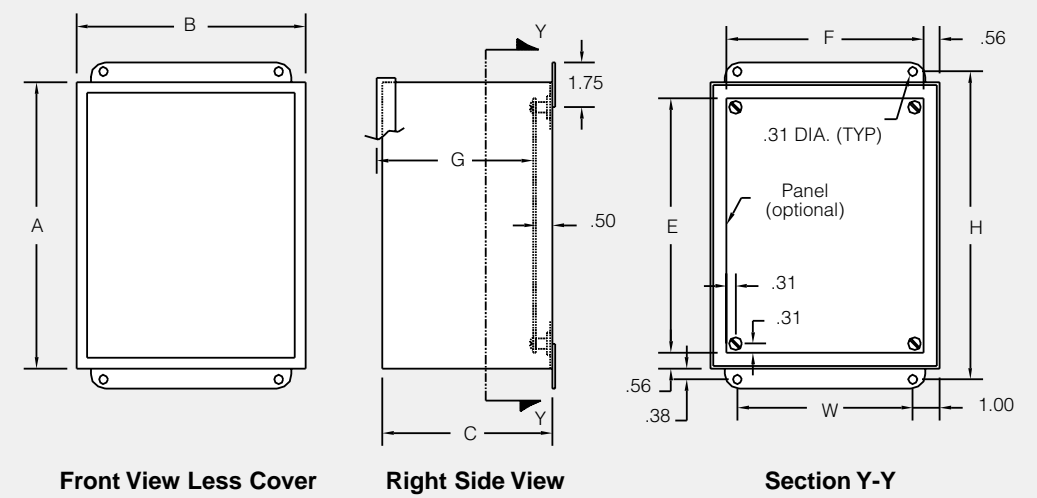


Fig. 1

Fig. 2

Part No.	Enclosure			Mounting centers		Part No.	Panel size		Usable depth	Clamps
	Height	Width	Depth	H	W		E	F		
	A	B	C							
E 404CHSS	4.00	4.00	3.00	4.75	2.00	NONE	-	-	-	Fig. 1
E 606CHSS	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50	Fig. 1
E 1008CHSS	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50	Fig. 2
E 1210CHSS	12.00	10.00	5.00	10.75	8.00	E 12P10	10.88	8.88	4.50	Fig. 2
E 8066CHSS	8.00	6.00	6.00	8.75	4.00	E 8P6	6.88	4.88	5.50	Fig. 2
E 10086CHSS	10.00	8.00	6.00	10.75	6.00	E 10P8	8.88	6.88	5.50	Fig. 2
E 1412CHSS	14.00	12.00	6.00	14.75	10.00	E 14P12	12.88	10.88	5.50	Fig. 2
E 16148CHSS	16.00	14.00	8.00	16.75	12.00	E 16P14	14.88	12.88	7.50	Fig. 2

### Technical Specifications Continuous Hinge Cover Enclosures



Front View Less Cover

Right Side View

Section Y-Y

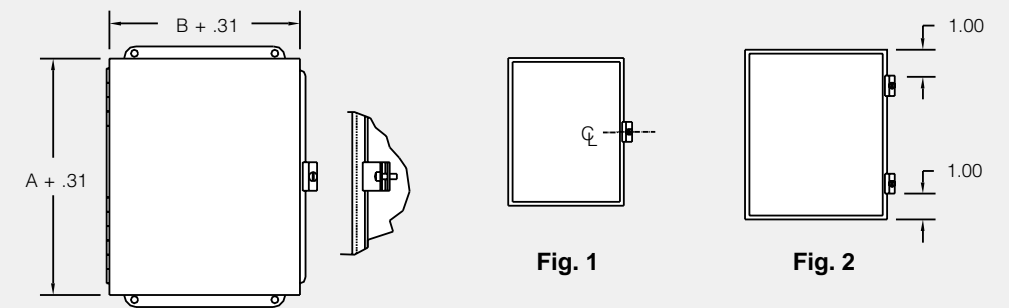
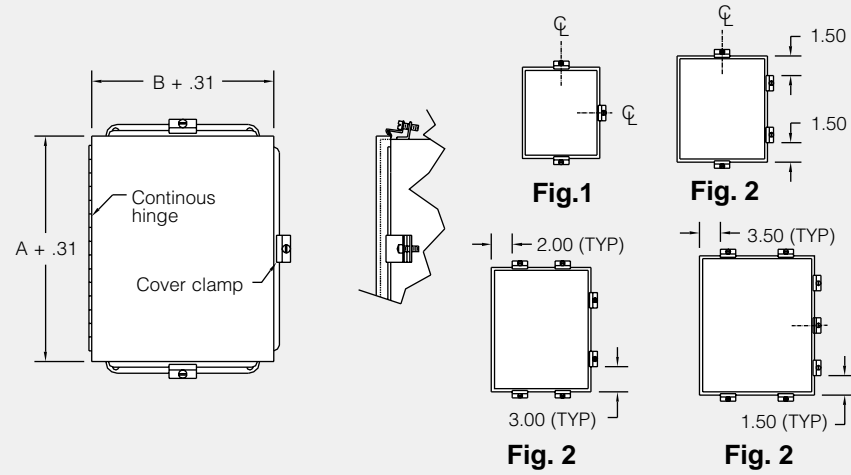
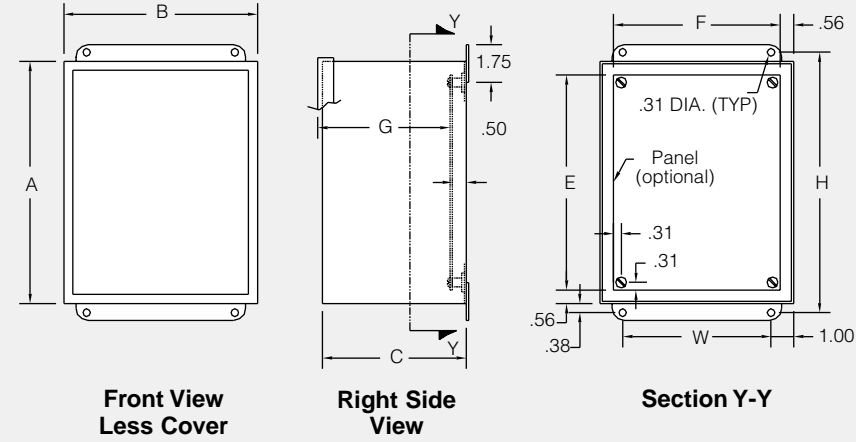


Fig. 1

Fig. 2

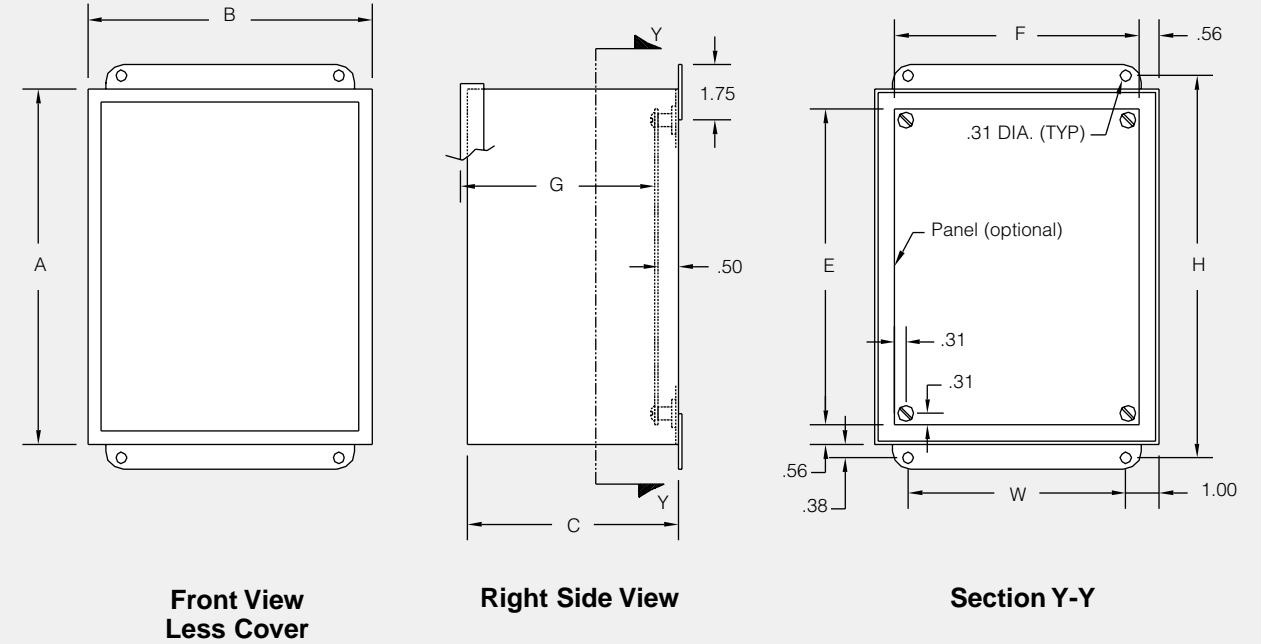
Part No.	Enclosure			Mounting centers		Part No.	Panel size		Usable depth	Clamps
	Height	Width	Depth	H	W		E	F		
	A	B	C							
E 606CHAL	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50	Fig. 1
E 8064CHAL	8.00	6.00	4.00	8.75	4.00	E 8P6	6.88	4.88	3.50	Fig. 2
E 1008CHAL	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50	Fig. 2
E 12106CHAL	12.00	10.00	6.00	12.75	8.00	E 12P10	10.88	8.88	5.50	Fig. 2
E 1412CHAL	14.00	12.00	6.00	14.75	10.00	E 14P12	12.88	10.88	5.50	Fig. 2
E 1614CHAL	16.00	14.00	6.00	16.75	12.00	E 16P14	14.88	12.88	5.50	Fig. 2

**Technical Specifications**  
Continuous Hinge Cover Boxes



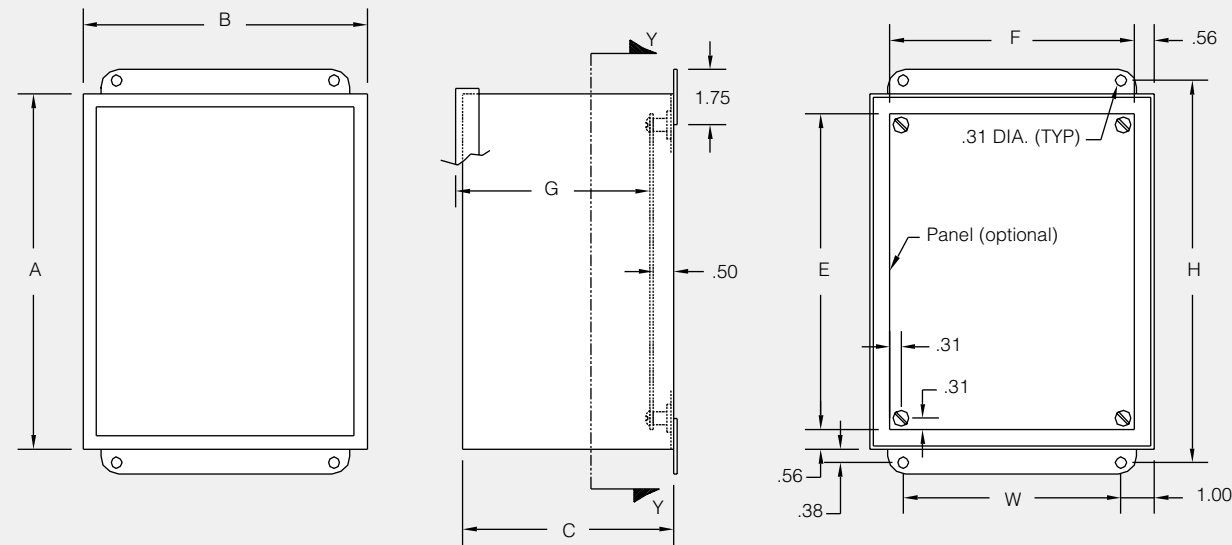
Enclosure		Mounting Panel									
Part No.	Part No.	Height	Width	Depth	Mounting centers		Part No.	Panel size		Usable depth	Clamps
304 SS	316 SS	A	B	C	H	W		E	F	G	
E 404CHNFSS	E 404CHNFSS6	4.00	4.00	3.00	4.75	2.00	-	-	-	-	Fig. 1
E 604CHNFSS	E 604CHNFSS6	6.00	4.00	3.00	6.75	2.00	E 6P4	4.88	2.88	2.50	Fig. 1
E 806CHNFSS	-	8.00	6.00	3.50	8.75	4.00	E 8P6	6.88	4.88	3.00	Fig. 1
E 6044CHNFSS	E 6044CHNFSS6	6.00	4.00	4.00	6.75	2.00	E 6P4	4.88	2.88	3.50	Fig. 1
E 606CHNFSS	E 606CHNFSS6	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50	Fig. 1
E 8064CHNFSS	E 8064CHNFSS6	8.00	6.00	4.00	8.75	4.00	E 8P6	6.88	4.88	3.50	Fig. 1
E 1008CHNFSS	E 1008CHNFSS6	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50	Fig. 2
E 1210CHNFSS	-	12.00	10.00	5.00	12.75	8.00	E 12P10	10.88	8.88	4.50	Fig. 3
E 10086CHNFSS	-	10.00	8.00	6.00	10.75	6.00	E 10P8	8.88	6.88	5.50	Fig. 2
E 12106CHNFSS	E 12106CHNFSS6	12.00	10.00	6.00	12.75	8.00	E 12P10	10.88	8.88	5.50	Fig. 3
E 1212CHNFSS	E 1212CHNFSS6	12.00	12.00	6.00	12.75	10.00	E 12P12	10.88	10.88	5.50	Fig. 3
E 1412CHNFSS	-	14.00	12.00	6.00	14.75	10.00	E 14P12	12.88	10.88	5.50	Fig. 3
E 1614CHNFSS	E 1614CHNFSS6	16.00	14.00	6.00	16.75	12.00	E 16P14	14.88	12.88	5.50	Fig. 4

**Technical Specifications**  
Clamp Cover Junction Enclosures



Enclosure					Mounting Panel				
Part No.	Height	Width	Depth	Mounting centers		Part No.	Panel size		Usable depth
	A	B	C	H	W		E	F	G
E 404NFSS	4.00	4.00	3.00	4.75	2.00	-	-	-	-
E 6044NFSS	6.00	4.00	4.00	6.75	2.00	E 6P4	4.88	2.88	3.50
E 606NFSS	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50
E 8064NFSS	8.00	6.00	4.00	8.75	4.00	E 8P6	6.88	4.88	3.50
E 1008NFSS	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50
E 1210NFSS	12.00	10.00	5.00	12.75	8.00	E 12P10	10.88	8.88	4.50

### Technical Specifications Clamp Cover Junction Enclosures



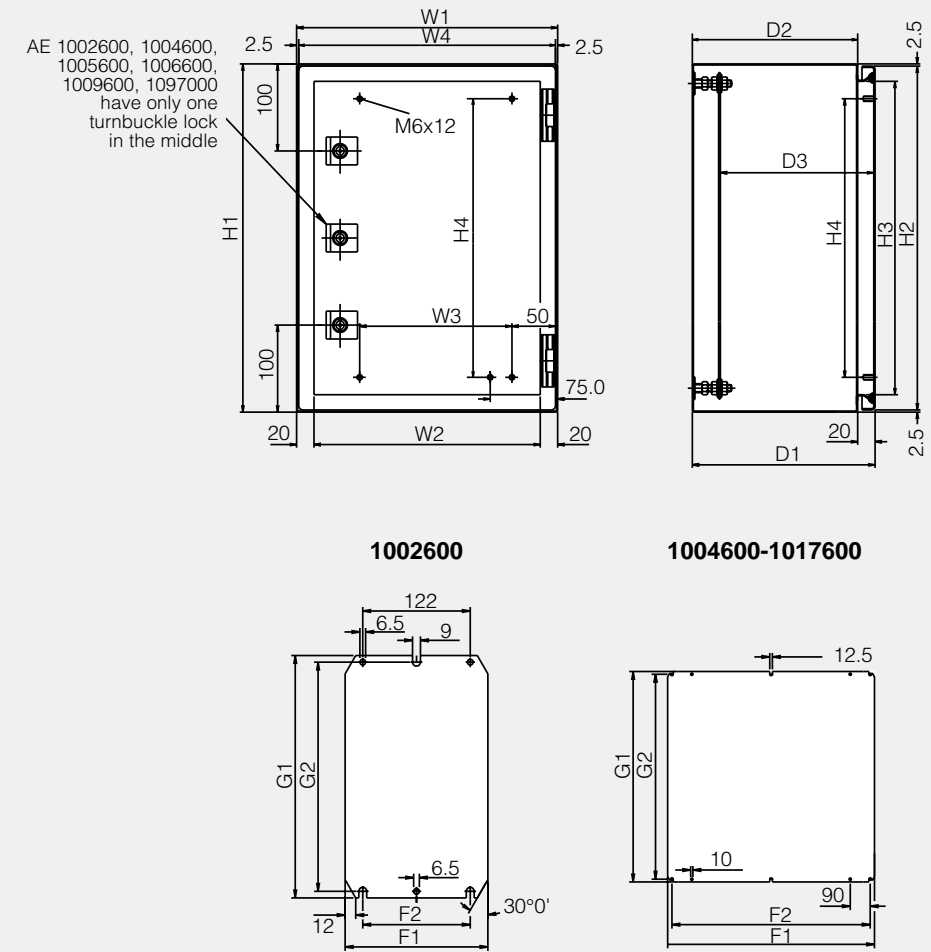
Front View  
Less Cover

Right Side View

Section Y-Y

Enclosure				Mounting Panel					
Part No.	Height A	Width B	Depth C	Mounting centers		Part No.	Panel size		Usable depth G
				H	W		E	F	
E 604NFAL	6.00	4.00	3.00	6.75	2.00	E 6P4	4.88	2.88	2.50
E 606NFAL	6.00	6.00	4.00	6.75	4.00	E 6P6	4.88	4.88	3.50
E 8064NFAL	8.00	6.00	4.00	8.75	4.00	E 8P6	6.88	4.88	3.50
E 1008NFAL	10.00	8.00	4.00	10.75	6.00	E 10P8	8.88	6.88	3.50
E 1210NFAL	12.00	10.00	5.00	12.75	8.00	E 12P10	10.88	8.88	4.50
E 1412NFAL	14.00	12.00	6.00	14.75	10.00	E 14P12	12.88	10.88	5.50
E 1614NFAL	16.00	14.00	6.00	16.75	12.00	E 16P14	14.88	12.88	5.50

### Technical Specifications AE Wallmount Enclosures



1002600

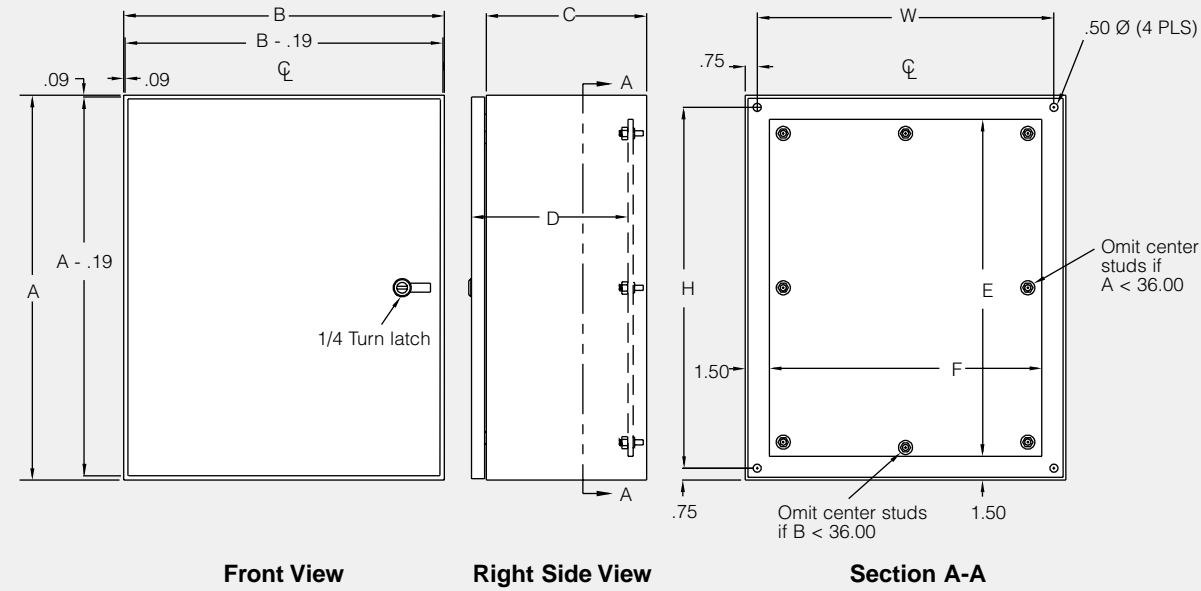
1004600-1017600

Part No.	Enclosure														Weight		
	H1	W1	D1	H2	H3	H4	W2	W3	W4	D2	D3	F1	F2	G1	G2	lbs	kg
	1002600	300	200	155	295	274	225	33	-	195	135	135	162	122	275		
1004600	300	380	155	295	260	225	340	250	375	135	113-129	334	295	275	250	19.4	8.8
1005600	380	300	210	375	340	275	260	175	295	190	168-184	254	215	355	330	19.1	8.7
1006600	380	380	210	375	340	275	340	250	375	190	168-184	334	295	355	330	26.4	12.0
1009600	380	600	210	375	340	275	560	475	595	190	168-184	549	510	355	330	37.4	17.0
1097000	400	300	210	395	360	325	260	175	295	190	168-184	254	215	254	215	20.5	9.3
1007600	500	500	210	495	460	425	460	375	495	190	168-184	449	410	470	445	41.6	18.9
1008600	600	380	210	595	560	525	340	250	375	190	168-184	334	295	570	545	37.4	17.0
1010600	600	600	210	595	560	525	560	475	595	190	168-184	549	510	570	545	55.0	25.0
1012600	760	600	210	755	720	675	560	475	595	190	168-184	549	510	730	705	69.7	31.7
1014600	760	760	300	755	720	675	720	625	755	280	258-274	704	665	730	705	93.5	42.5
1016600	1000	800	300	995	960	920	760	675	795	280	258-274	739	700	955	930	116.4	52.9
1017600	1200	800	300	1194	1160	1125	760	675	795	280	258-274	739	700	1150	1130	154.0	70.0

Note: Also available with integrated blind nuts — order Part No. XXXX.660.

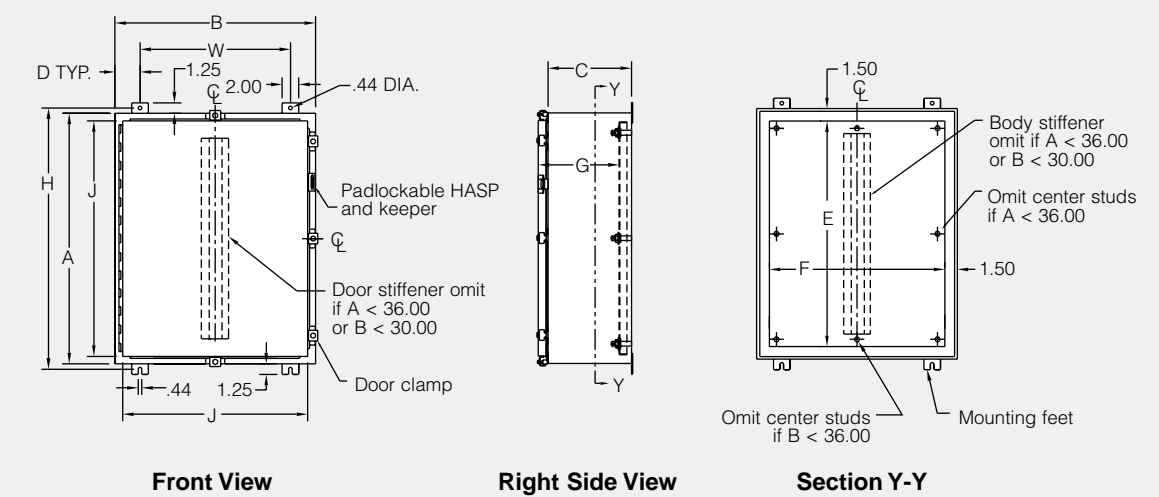


**Technical Specifications**  
Legacy Series Enclosures



Enclosure						
Part No.	Height	Width	Depth	Mounting centers		Usable depth
	A	B	C	H	W	J
L W120806SS	12.00	8.00	6.00	10.5	10.5	5.0
L W121206SS	12.00	12.00	6.00	10.5	10.5	5.0
L W161206SS	16.00	12.00	6.00	14.5	10.5	5.0
L W161208SS	16.00	12.00	8.00	14.5	10.5	7.0
L W161606SS	16.00	16.00	6.00	14.5	14.5	5.0
L W161608SS	16.00	16.00	8.00	14.5	14.5	7.0
L W201608SS	20.00	16.00	8.00	18.5	14.5	7.0
L W202008SS	20.00	20.00	8.00	18.5	18.5	7.0
L W202012SS	20.00	20.00	12.00	18.5	18.5	11.0
L W242008SS	24.00	20.00	8.00	22.5	18.5	7.0
L W242012SS	24.00	20.00	12.00	22.5	18.5	11.0
L W242408SS	24.00	24.00	8.00	22.5	22.5	7.0
L W242412SS	24.00	24.00	12.00	22.5	22.5	11.0
L W302408SS	30.00	24.00	8.00	28.5	22.5	7.0
L W302412SS	30.00	24.00	12.00	28.5	22.5	11.0
L W303008SS	30.00	30.00	8.00	28.5	28.5	7.0
L W303012SS	30.00	30.00	12.00	28.5	28.5	11.0
L W362408SS	36.00	24.00	8.00	34.5	22.5	7.0
L W363012SS	36.00	30.00	12.00	34.5	28.5	11.0
L W483612SS	48.00	36.00	12.00	46.5	34.5	11.0
L W603616SS	60.00	36.00	16.00	58.5	34.5	11.0

**Technical Specifications**  
One Door Wallmount Boxes

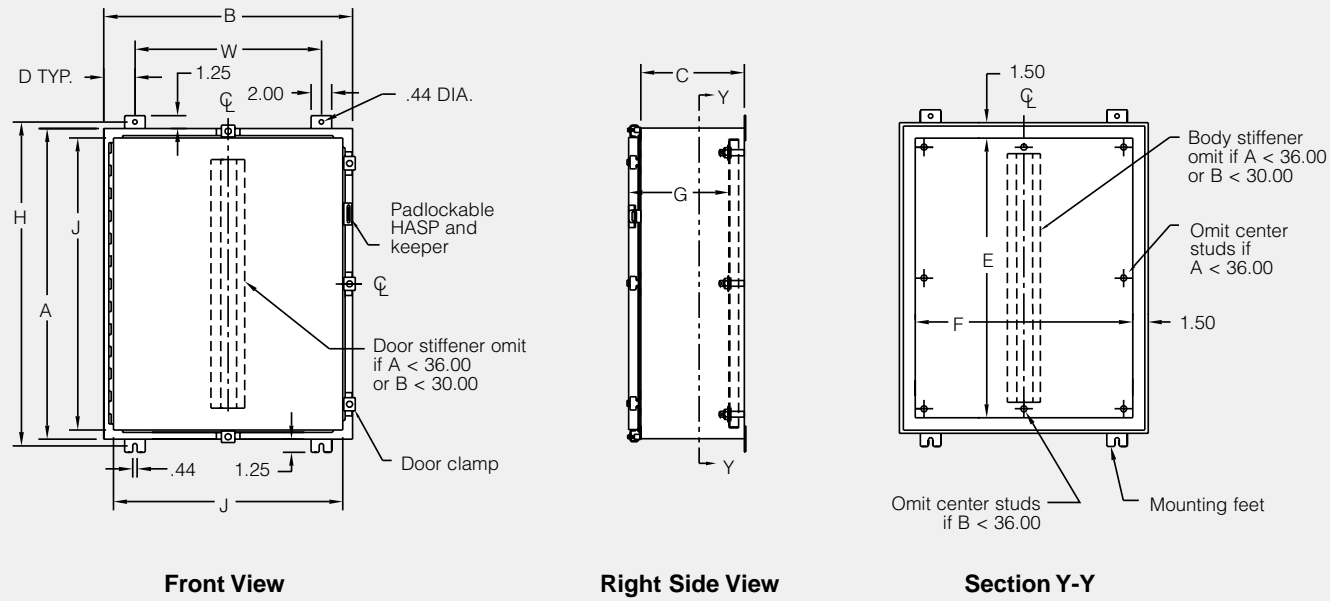


Enclosure									Mounting Panel					
Part No. 304SS	Part No. 316SS	Height	Width	Depth	Mounting centers			Door and body stiffener	Cover size		Part No.	Panel size		Usable depth
		A	B	C	H	W	D		J	K		E	F	
E 16H1206SS	E 16H1206SS6	16.00	12.00	6.00	17.25	9.50	1.25	NO	14.19	10.16	E 16P12	13.00	9.00	6.00
E 16H1606SS	E 16H1606SS6	16.00	16.00	6.00	17.25	10.00	3.00	NO	14.19	14.16	E 16P16	13.00	13.00	6.00
E 20H1606SS	E 20H1606SS6	20.00	16.00	6.00	21.25	10.00	3.00	NO	18.19	14.16	E 20P16	17.00	13.00	6.00
E 20H2006SS	E 20H2006SS6	20.00	20.00	6.00	21.25	14.00	3.00	NO	18.19	18.16	E 20P20	17.00	17.00	6.00
E 24H1206SS	-	24.00	12.00	6.00	25.25	9.50	1.25	NO	22.19	10.16	E 12P24	21.00	9.00	6.00
E 24H2006SS	E 24H2006SS6	24.00	20.00	6.00	25.25	14.00	3.00	NO	22.19	18.16	E 24P20	21.00	17.00	6.00
E 24H2406SS	-	24.00	24.00	6.00	25.25	18.00	3.00	NO	22.19	22.16	E 24P24	21.00	21.00	6.00
E 16H1208SS	-	16.00	12.00	8.00	17.25	9.50	1.25	NO	14.19	10.16	E 16P12	13.00	9.00	8.00
E 20H1608SS	E 20H1608SS6	20.00	16.00	8.00	21.25	10.00	3.00	NO	18.19	14.16	E 20P16	17.00	13.00	8.00
E 20H2008SS	E 20H2008SS6	20.00	20.00	8.00	21.25	14.00	3.00	NO	18.19	18.16	E 20P20	17.00	17.00	8.00
E 20H2408SS	-	20.00	24.00	8.00	21.25	18.00	3.00	NO	18.19	22.16	E 24P20	17.00	21.00	8.00
E 24H1608SS	-	24.00	16.00	8.00	25.25	10.00	3.00	NO	22.19	14.16	E 24P16	21.00	13.00	8.00
E 24H2008SS	-	24.00	20.00	8.00	25.25	14.00	3.00	NO	22.19	18.16	E 24P20	21.00	17.00	8.00
E 24H2408SS	E 24H2408SS6	24.00	24.00	8.00	25.25	18.00	3.00	NO	22.19	22.16	E 24P24	21.00	21.00	8.00
E 24H3008SS	-	24.00	30.00	8.00	25.25	24.00	3.00	NO	22.19	28.16	E 30P24	21.00	27.00	8.00
E 30H2008SS	-	30.00	20.00	8.00	31.25	14.00	3.00	NO	28.19	18.16	E 30P20	27.00	17.00	8.00
E 30H2408SS	E 30H2408SS6	30.00	24.00	8.00	31.25	18.00	3.00	NO	28.19	22.16	E 30P24	27.00	21.00	8.00
E 30H3008SS	-	30.00	30.00	8.00	31.25	24.00	3.00	NO	28.19	28.16	E 30P30	27.00	27.00	8.00
E 36H2408SS	E 36H2408SS6	36.00	24.00	8.00	37.25	18.00	3.00	NO	34.19	22.16	E 36P24	33.00	21.00	8.00
E 36H3008SS	-	36.00	30.00	8.00	37.25	24.00	3.00	YES	34.19	28.16	E 36P30	33.00	27.00	7.37*
E 20H1610SS	-	20.00	16.00	10.00	21.25	10.00	3.00	NO	18.19	14.16	E 20P16	17.00	13.00	10.00
E 24H2010SS	-	24.00	20.00	10.00	25.25	14.00	3.00	NO	22.19	18.16	E 24P20	21.00	17.00	10.00
E 30H2410SS	-	30.00	24.00	10.00	31.25	18.00	3.00	NO	28.19	22.16	E 30P24	27.00	21.00	10.00
E 36H2410SS	-	36.00	24.00	10.00	37.25	18.00	3.00	NO	34.19	22.16	E 36P24	33.00	21.00	10.00
E 36H3010SS	-	36.00	30.00	10.00	37.25	24.00	3.00	YES	34.19	28.16	E 36P30	33.00	27.00	9.37*
E 42H3010SS	-	42.00	30.00	10.00	43.25	24.00	3.00	YES	40.19	28.16	E 42P30	39.00	27.00	9.37*
E 24H2412SS	E 24H2412SS6	24.00	24.00	12.00	25.25	18.00	3.00	NO	22.19	22.16	E 24P24	21.00	21.00	12.00
E 30H2412SS	-	30.00	24.00	12.00	31.25	18.00	3.00	NO	28.19	22.16	E 30P24	27.00	21.00	12.00
E 36H3012SS	E 36H3012SS6	36.00	30.00	12.00	37.25	24.00	3.00	YES	34.19	28.16	E 36P30	33.00	27.00	11.37*
E 36H3612SS	-	36.00	36.00	12.00	37.25	30.00	3.00	YES	34.19	34.16	E 36P36	33.00	33.00	11.37*
E 48H3612SS	E 48H3612SS6	48.00	36.00	12.00	49.25	30.00	3.00	YES	46.19	34.16	E 48P36	45.00	33.00	11.37*
E 60H3612SS	-	60.00	36.00	12.00	61.25	30.00	3.00	YES	58.19	34.16	E 60P36	57.00	33.00	11.37*
E 30H2416SS	E 30H2416SS6	30.00	24.00	16.00	31.25	18.00	3.00	NO	28.19	22.16	E 30P24	27.00	21.00	16.00
E 36H3016SS	-	36.00	30.00	16.00	37.25	24.00	3.00	YES	34.19	28.16	E 36P30	33.00	27.00	15.37*
E 48H3616SS	-	48.00	36.00	16.00	49.25	30.00	3.00	YES	46.19	34.16	E 48P36	45.00	33.00	15.37*
E 60H3616SS	E 60H3616SS6	60.00	36.00	16.00	61.25	30.00	3.00	YES	58.19	34.16	E 60P36	57.00	33.00	15.37*

\* Usable depth reduced by .625" at door stiffener.



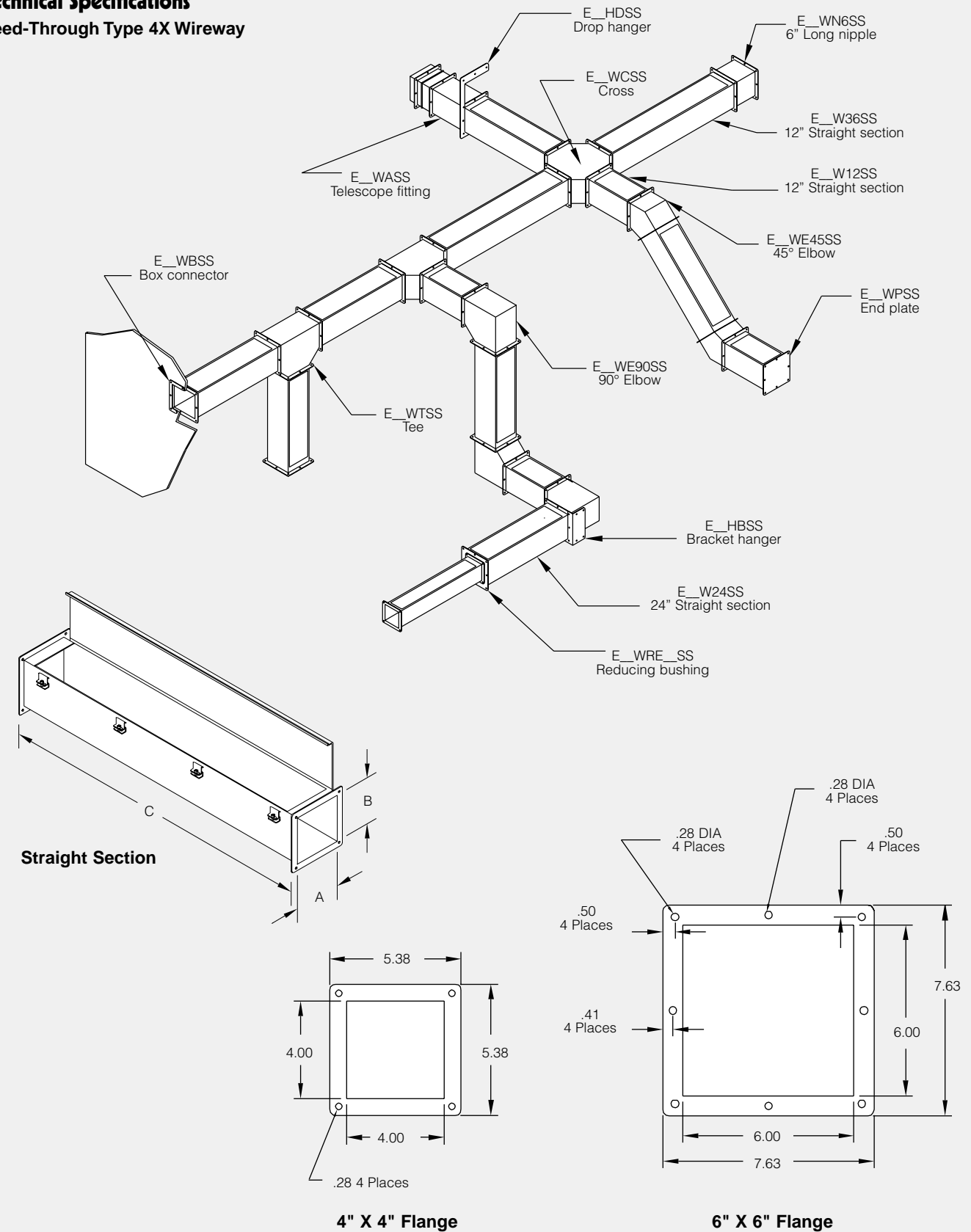
### Technical Specifications One Door Wallmount Boxes



Part No.	Enclosure							Mounting Panel					
	Height A	Width B	Depth C	Mounting centers			Door and body stiffener	Cover size		Part No.	Panel size		Usable depth G
				H	W	D		J	K		E	F	
E 16H1206AL	16.00	12.00	6.00	17.25	9.50	1.25	NO	14.19	10.16	E 16P12	13.00	9.00	6.00
E 20H1606AL	20.00	16.00	6.00	21.25	10.00	3.00	NO	18.19	14.16	E 20P16	17.00	13.00	6.00
E 20H2006AL	20.00	20.00	6.00	21.25	14.00	3.00	NO	18.19	18.16	E 20P20	17.00	17.00	6.00
E 24H2006AL	24.00	20.00	6.00	25.25	14.00	3.00	NO	22.19	18.16	E 24P20	21.00	17.00	6.00
E 16H1608AL	16.00	16.00	8.00	17.25	10.00	3.00	NO	14.19	14.16	E 16P16	13.00	13.00	8.00
E 24H2408AL	24.00	24.00	8.00	25.25	18.00	3.00	NO	22.19	22.16	E 24P24	21.00	21.00	8.00
E 30H2408AL	30.00	24.00	8.00	31.25	18.00	3.00	NO	28.19	22.16	E 30P24	27.00	21.00	8.00
E 30H2412AL	30.00	24.00	12.00	31.25	18.00	3.00	NO	28.19	22.16	E 30P24	27.00	21.00	12.00
E 36H3012AL	36.00	30.00	12.00	37.25	24.00	3.00	YES	34.19	28.16	E 36P30	33.00	27.00	11.37*

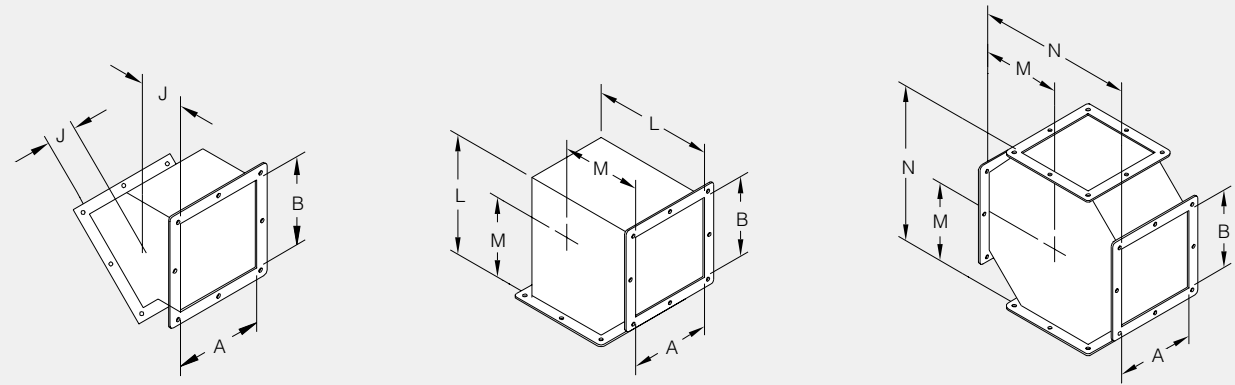
\* Usable depth reduced by .625" at door stiffener.

### Technical Specifications Feed-Through Type 4X Wireway



Wireway															
A x B	C	C	C	C	C	C	E	F	G	I	J	K	L	M	N
4 x 4	12	24	36	48	60	120	3.68	7.54	5.38	2.50	3.30	2.90	7.00	4.75	9.50
6 x 6	12	24	36	48	60	120	5.68	10.36	7.62	4.00	3.72	3.10	9.00	5.75	11.50

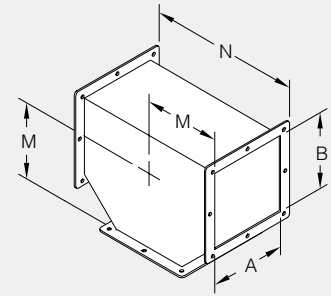
**Technical Specifications**  
Feed-Through Type 4X Wireway



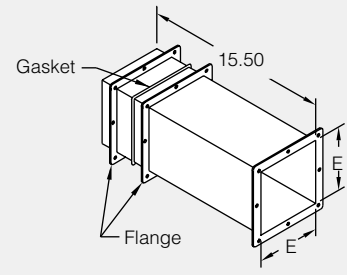
**45° Elbow**

**90° Elbow**

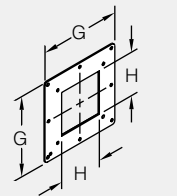
**Cross**



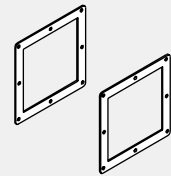
**Tee**



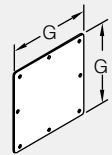
**Telescope Fitting**



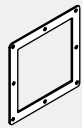
**Reducing Bushing**



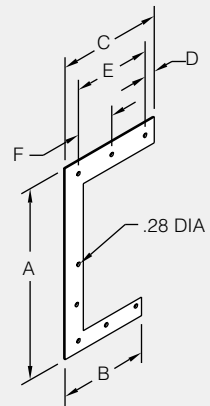
**Box Connector**



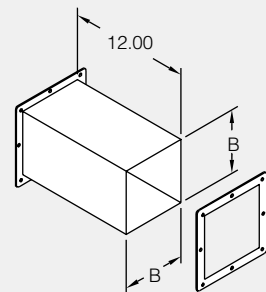
**Closure Plate**



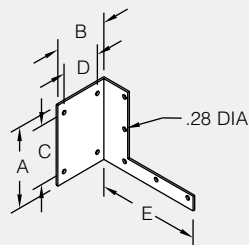
**Gasket Flange**



**Drop Hanger**

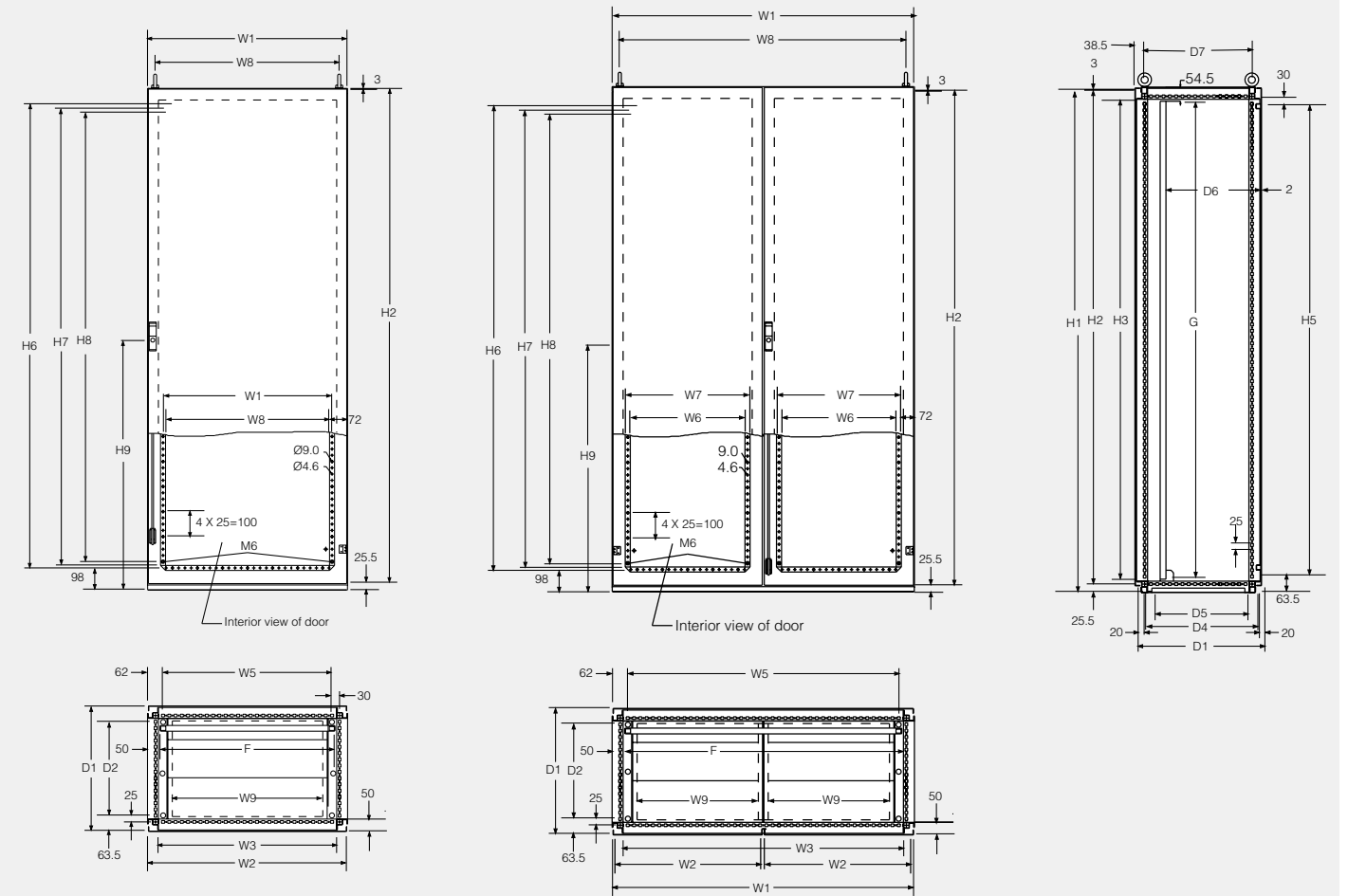


**Cut-Off Fitting**



**Bracket Hanger**

**Technical Specifications**  
PS Stainless Steel Enclosures



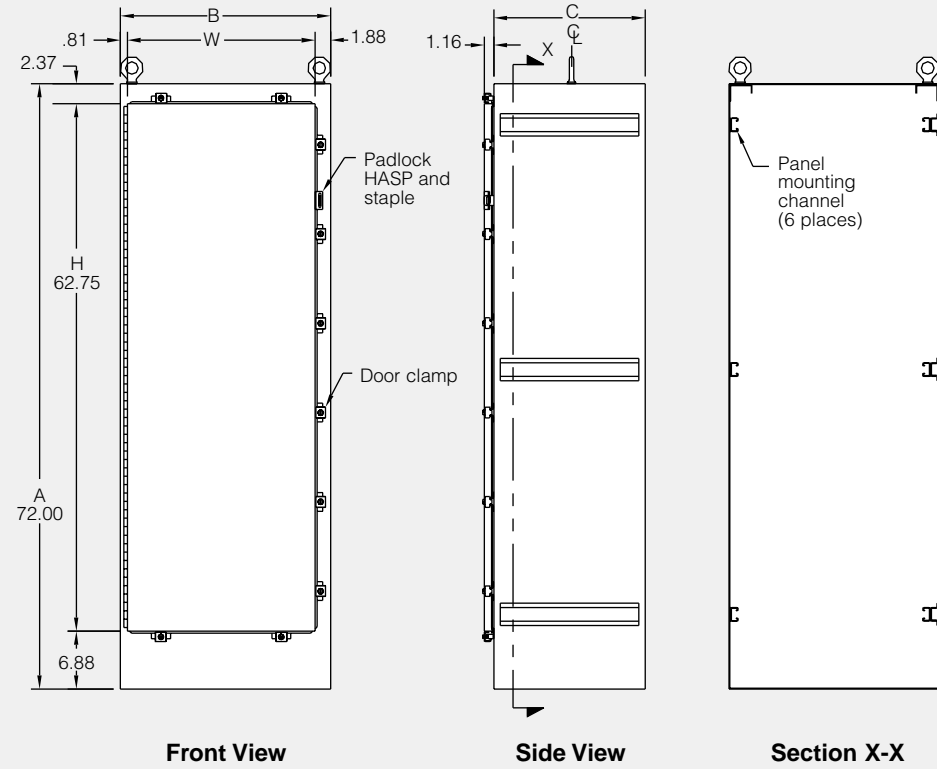
Enclosure																			
Part No.	H1	H2	H3	H4	H5	H6	H7	H8	H9	W1	W2	W3	W4	W5	W6	W7	W8	W9	
4452600	2010	1975	1912	1896	1875	1850	1830	1800	998	512	592	599	499	475	455	475	535	401	
4450600	2010	1975	1912	1896	1875	1850	1830	1800	998	712	392	799	699	675	655	675	735	601	
4451600	2010	1975	1912	1896	1875	1850	1830	1800	998	1112	592	1199	1099	1075	455	475	1135	481	

Dimensions in millimeters (mm) unless otherwise indicated.



### Technical Specifications

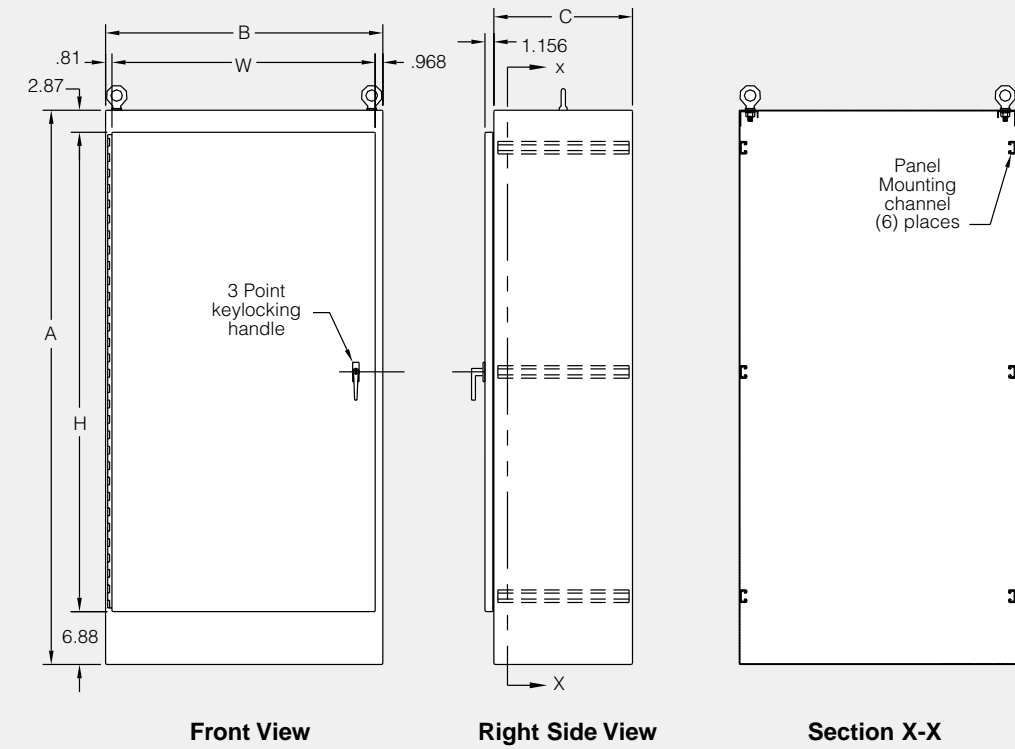
#### One Door Freestanding Enclosures



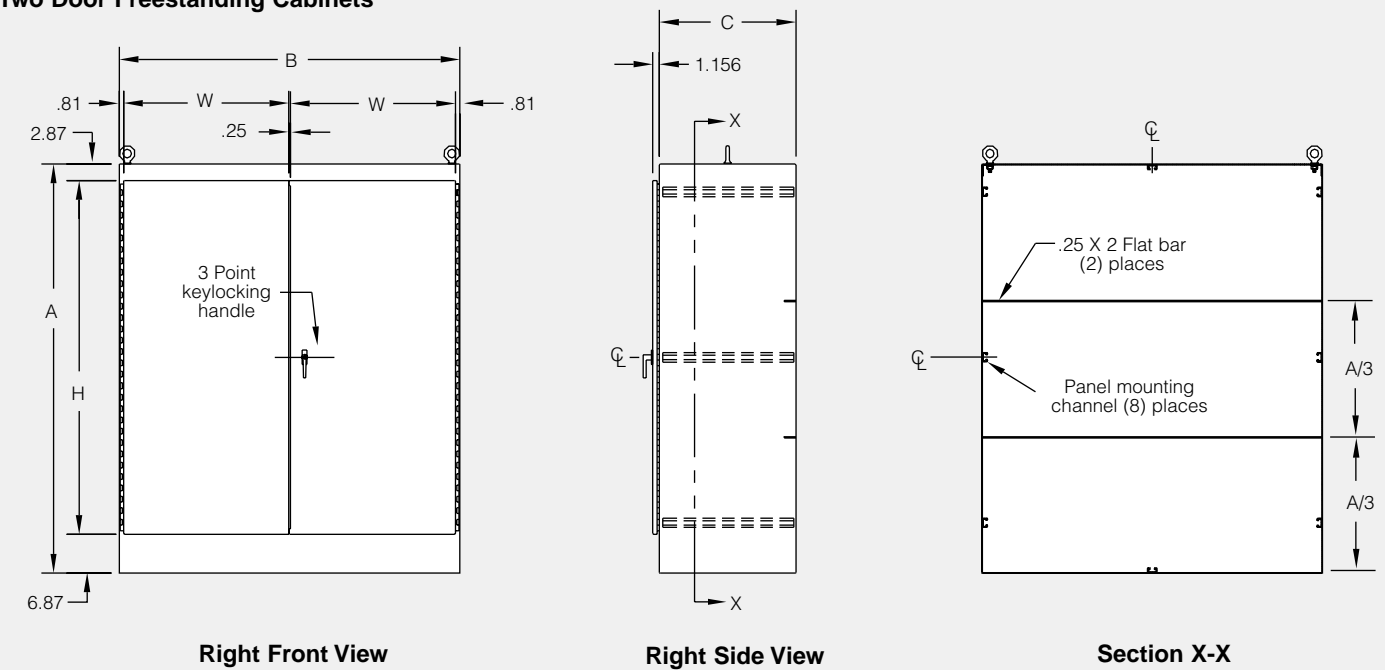
Part No.	Enclosure			Full Mounting Panel		Half Mounting Panel					
	Height A	Width B	Depth C	Door size		Part No.	Panel size				
				H	W		E	F			
<b>E 72H2518FSSS</b>	72.00	25.00	18.00	62.75	22.31	<b>E 72P24F1</b>	60.00	20.00	<b>E 72P24F2</b>	30.88	20.00
<b>E 72H3124FSSS</b>	72.00	31.00	24.00	62.75	28.31	<b>E 72P30F1</b>	60.00	26.00	<b>E 72P30F2</b>	30.88	26.00
<b>E 72H3724FSSS</b>	72.00	37.00	24.00	62.75	34.31	<b>E 72P36F1</b>	60.00	32.00	<b>E 72P36F2</b>	30.88	32.00

### Technical Specifications

#### One Door Freestanding Cabinets

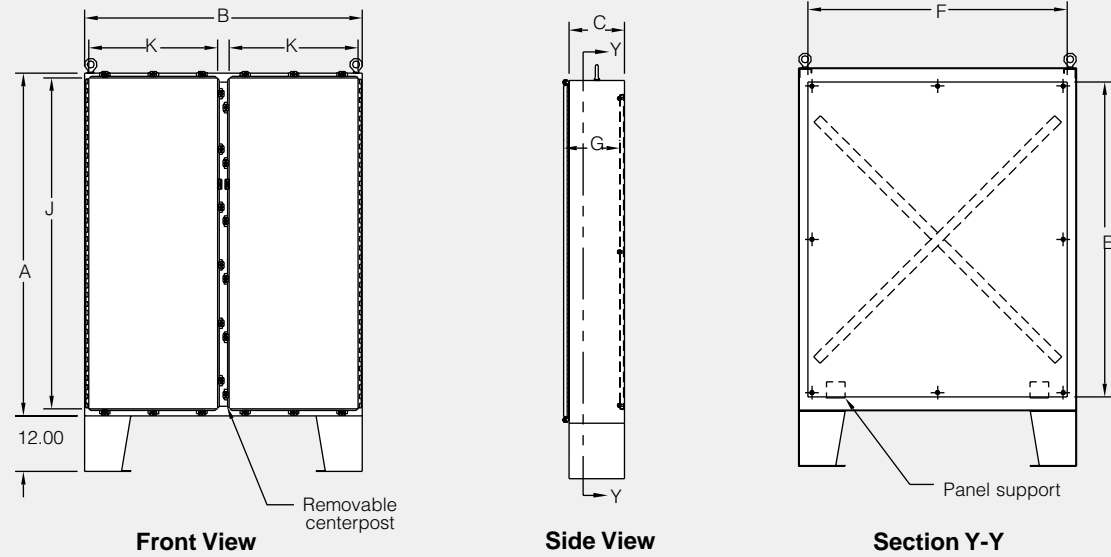


#### Two Door Freestanding Cabinets



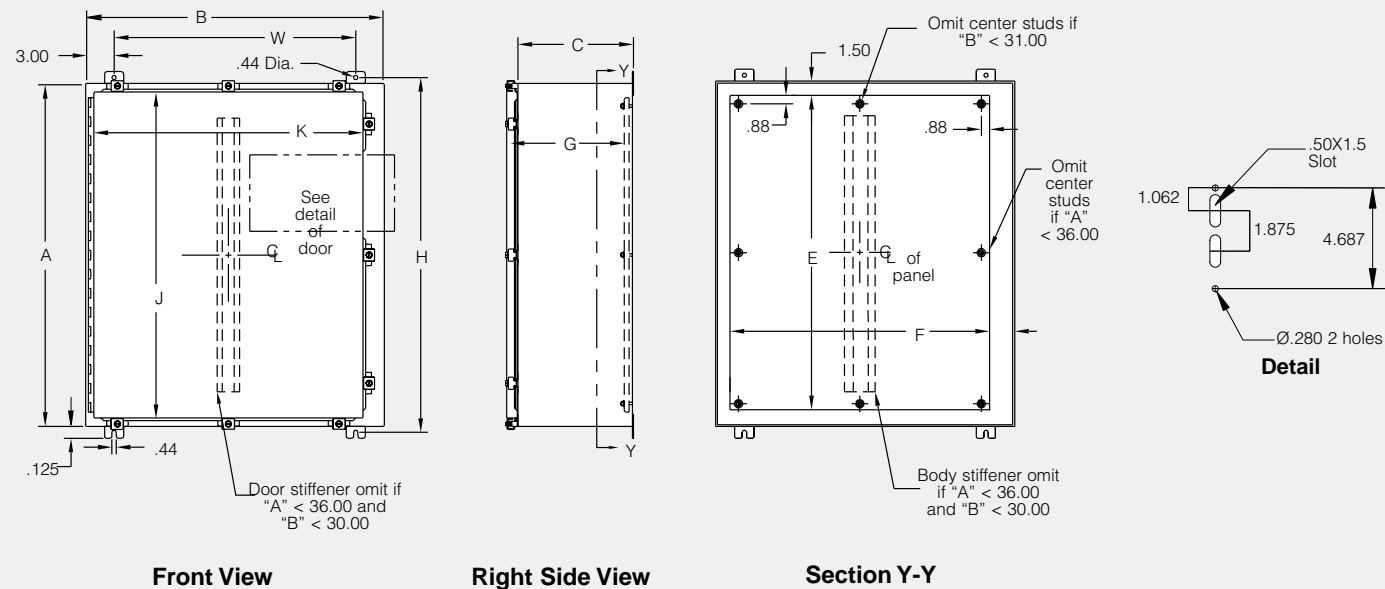
Part No.	Enclosure					
	Height A	Width B	Depth C	Door size		Maximum usable depth panel installed
				H	W	
<b>One Door Enclosure</b>						
<b>E 723618FSSS</b>	72.00	36.00	18.00	62.25	34.22	17.63
<b>E 723624FSSS</b>	72.00	36.00	24.00	62.25	34.22	23.63
<b>Two Door Enclosure</b>						
<b>E 727224FSDSS</b>	72.00	72.00	24.00	62.25	35.06	21.13

### Technical Specifications Two Door Floormount Enclosures



Enclosure				Mounting Panel					
Part No.	Height A	Width B	Depth C	Door size		Part No.	Panel size		Usable depth G
				J	K		E	F	
E 62H4812SS	62.00	48.00	12.00	59.50	21.81	E 60P48	56.00	44.00	12.00
E 62H6012SS	62.00	60.00	12.00	59.50	27.81	E 60P60	56.00	56.00	12.00
E 74H7224SS	74.00	72.00	24.00	71.50	33.81	E 72P72	68.00	68.00	24.00

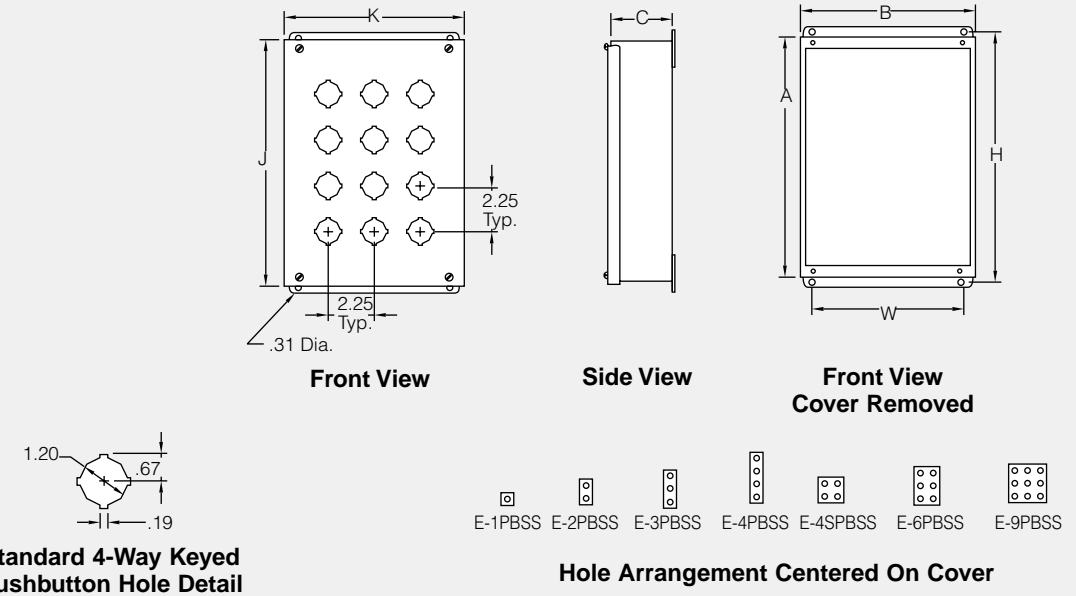
### NEMA 4X Wallmount FMD Boxes



Enclosure							Mounting Panel					
Part No.	Height A	Width B	Depth C	Mounting centers		Door and body stiffener	Door size		Part No.	Mounting panel size		Usable depth
				H	W		J	K		E	F	
E 24HS2508SS	24.00	25.38	8.00	25.25	19.38	NO	22.25	22.25	E 24P24	21.00	21.00	8.00
E 36HS3108SS	36.00	31.38	8.00	37.25	25.38	YES	34.25	28.25	E 36P30	33.00	27.00	7.37*
E 42HS3112SS	42.00	31.38	12.00	43.25	25.38	YES	40.25	28.25	E 42P30	39.00	27.00	11.37*
E 48HS3712SS	48.00	37.38	12.00	49.25	31.38	YES	46.25	34.25	E 48P36	45.00	33.00	11.37*
E 60HS3712SS	60.00	37.38	12.00	61.25	31.38	YES	58.25	34.25	E 60P36	57.00	33.00	11.37*

\* Usable depth reduced by .625" at door stiffener.

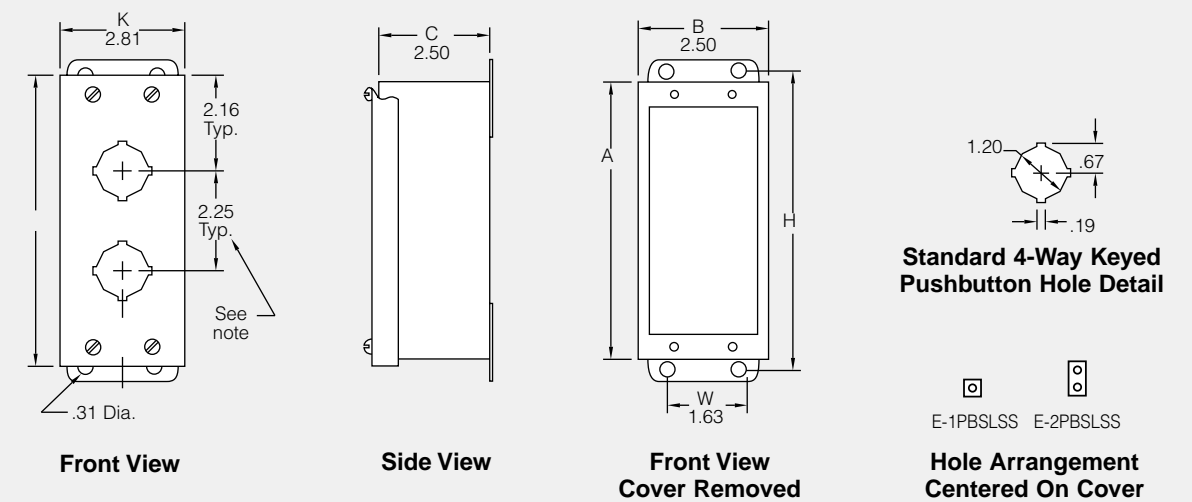
### Technical Specifications Standard Pushbutton Boxes



Pushbutton Box							
Part No.	Height A	Width B	Depth C	Mounting centers		Cover size	
				H	W	J	K
E 1PBSS	3.50	3.25	2.75	4.00	2.38	3.81	3.56
E 2PBSS	5.75	3.25	2.75	6.25	2.38	6.06	3.56
E 3PBSS	8.00	3.25	2.75	8.50	2.38	8.31	3.56
E 4PBSS	10.25	3.25	2.75	10.75	2.38	10.56	3.56
E 4SPBSS*	7.25	6.25	3.00	7.75	5.38	7.56	6.56
E 6PBSS*	9.50	6.25	3.00	10.00	5.38	9.81	6.56
E 9PBSS*	9.50	8.50	3.00	10.00	7.63	9.81	8.81

\* Can be mounted to a Rittal Electromate column and base.

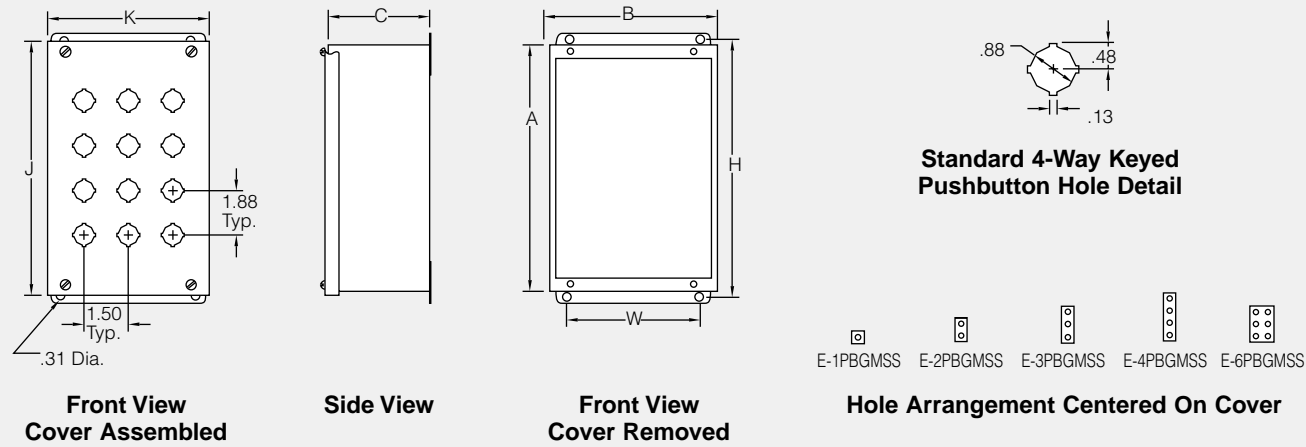
### Slim Pushbutton Boxes



Pushbutton Box							
Part No.	Height A	Width B	Depth C	Mounting centers		Cover size	
				H	W	J	K
E 1PBSLSS	4.00	2.50	2.50	4.50	1.63	4.31	2.81
E 2PBSLSS	6.25	2.50	2.50	6.75	1.63	6.56	2.81



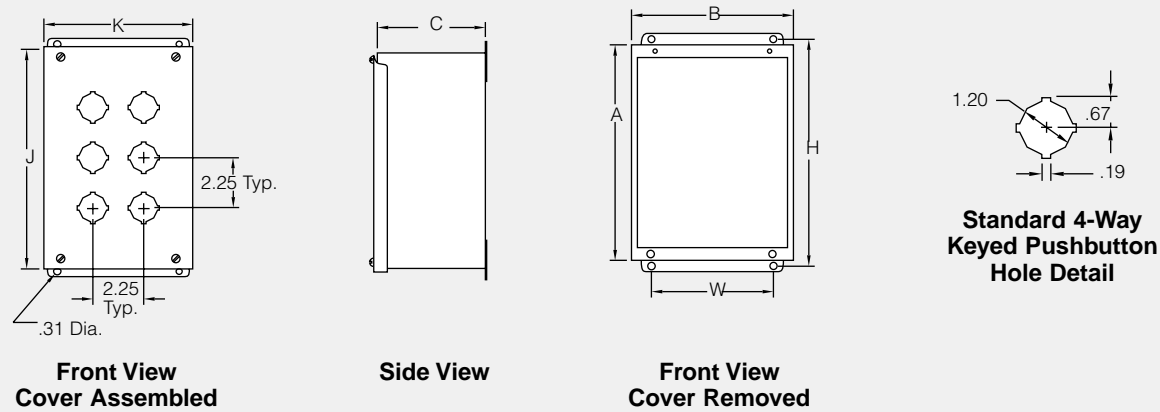
### Technical Specifications Miniature Pushbutton Boxes



Pushbutton Box							
Part No.	Height A	Width B	Depth C	Mounting centers		Cover size	
				H	W	J	K
E 1PBGMS	3.25	2.75	3.50	3.75	1.88	3.56	3.06
E 2PBGMS	5.13	2.75	3.50	5.63	1.88	5.44	3.06
E 3PBGMS	7.00	2.75	3.50	7.50	1.88	7.31	3.06
E 4PBGMS	8.88	2.75	3.50	9.38	1.88	9.19	3.06
E 6PBGMS*	8.50	5.00	4.25	9.00	4.13	8.81	5.31

\* Can be mounted to a Rittal Electromate column and base.

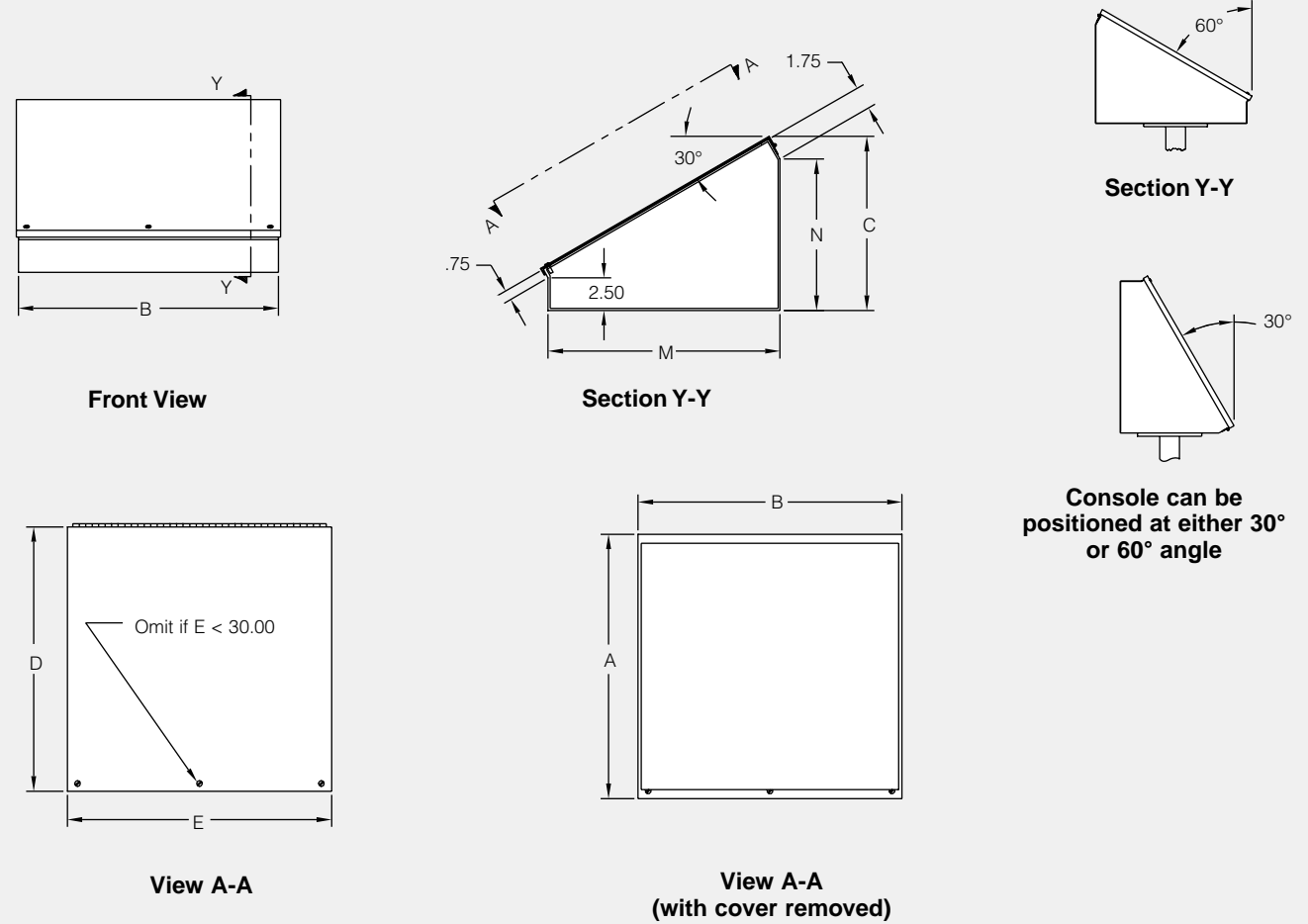
### Extra Deep Pushbutton Boxes



Pushbutton Box							
Part No.	Height A	Width B	Depth C	Mounting centers		Cover size	
				H	W	J	K
E 1PBXDSS	4.00	4.00	4.75	4.50	3.13	4.31	4.31
E 2PBXDSS	6.00	4.00	4.75	6.50	3.13	6.31	4.31
E 3PBXDSS	8.00	4.00	4.75	8.50	3.13	8.31	4.31
E 4PBXDSS	10.00	4.00	4.75	10.50	3.13	10.31	4.31
E 4SPBXDSS*	7.25	6.25	4.75	7.75	5.38	7.56	6.56
E 6PBXDSS*	9.50	6.25	4.75	10.00	5.38	9.81	6.56

\* Can be mounted to a Rittal Electromate column and base.

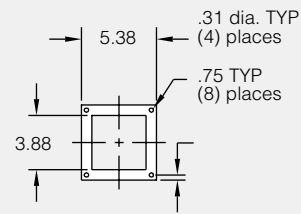
### Technical Specifications Consoles, Pedestals and Bases



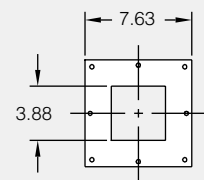
Console can be positioned at either 30° or 60° angle

Consoles, Pedestals, and Bases										
Part No.	Height A	Width B	Depth C	Cover plate		Stiffener location C	Cover size		Desk depth/height	
				E	F		D	E	M	N
<b>Consoles</b>										
E 8C8SS	8.00	8.00	7.09	-	-	-	8.31	8.31	7.44	5.63
E 8C12SS	8.00	12.00	7.09	-	-	-	8.31	12.31	7.44	5.63
E 8C16SS	8.00	16.00	7.09	-	-	-	8.31	16.31	7.44	5.63
E 12C12SS	12.00	12.00	9.09	-	-	-	12.31	12.31	10.91	7.63
E 12C16SS	12.00	16.00	9.09	-	-	-	12.31	16.31	10.91	7.63
E 12C20SS	12.00	20.00	9.09	-	-	-	12.31	20.31	10.91	7.63
E 16C24SS	16.00	24.00	11.09	-	-	-	16.31	24.31	14.38	9.63
<b>Pedestals</b>										
E 44CCOLSS	4.00	4.00	-	7.00	3.75	-	-	-	-	-
E 66CCOLSS	6.00	6.00	-	7.75	5.75	-	-	-	-	-
<b>Bases</b>										
E 18SBASESS	18.00	18.00	-	-	-	3.00	-	-	-	-
E 24SBASESS	24.00	24.00	-	-	-	5.00	-	-	-	-

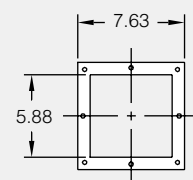
### Technical Specifications Consoles, Pedestals and Bases



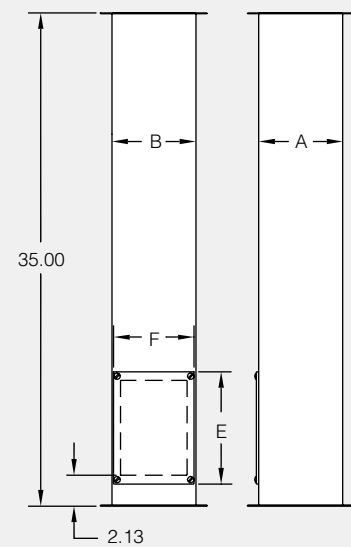
**4x4 Top  
Column Flange**



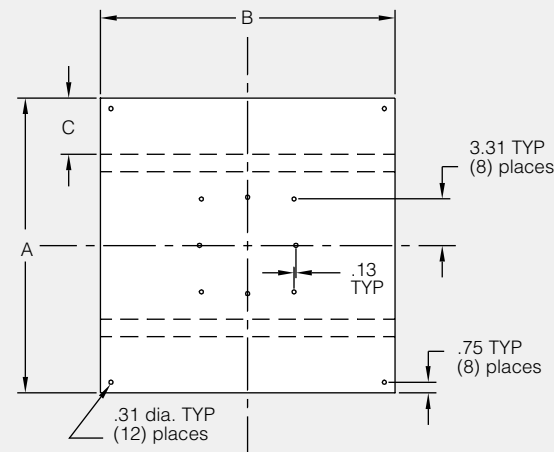
**4x4 Bottom  
Column Flange  
See Base for Hole Locations**



**6x6 Bottom  
Column Flange  
See Base for Hole Locations**



**Column**

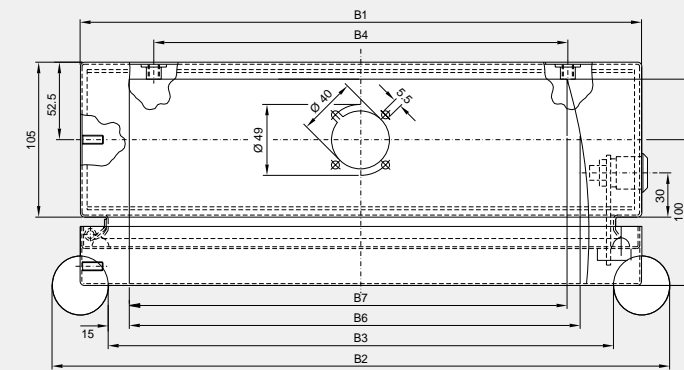
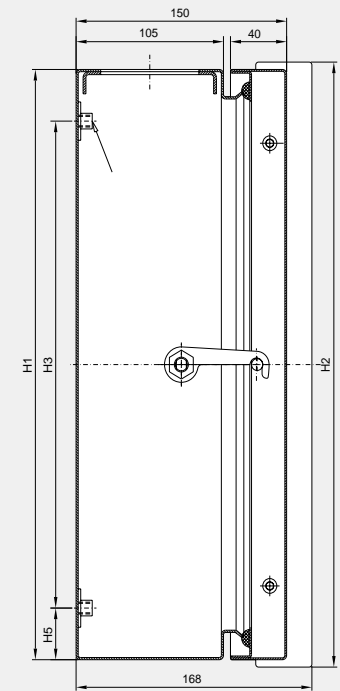
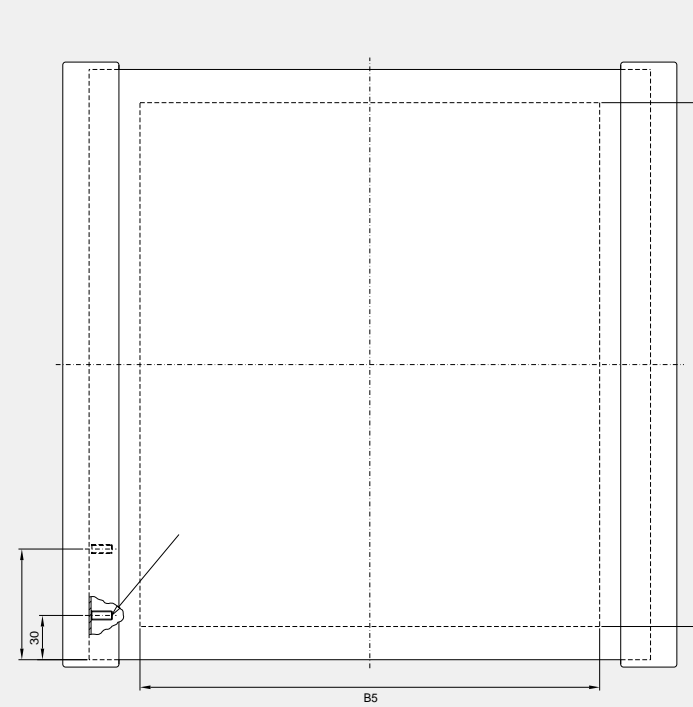


**Base Top View**



**Base End View**

### Technical Specifications CP Operator Interface Enclosures



Part No.	Packs of	Height H1	Width B1	Depth	Enclosure										Weight (kg)
					B2	B3	B4	B5	B6	B7	H2	H3	H4	H5	
6534010	1	200	300	150	340	260	260	225	220	206	210	122	155	39	9.5
6535010	1	300	300	150	340	260	215	225	220	206	310	250	255	25	11.4
6536010	1	300	400	150	440	360	295	325	320	310	310	250	255	25	12.7
6538010	1	400	400	150	440	360	295	325	320	310	410	330	355	35	13.5
6539010	1	400	600	150	640	560	510	525	520	310	410	330	355	35	15.1

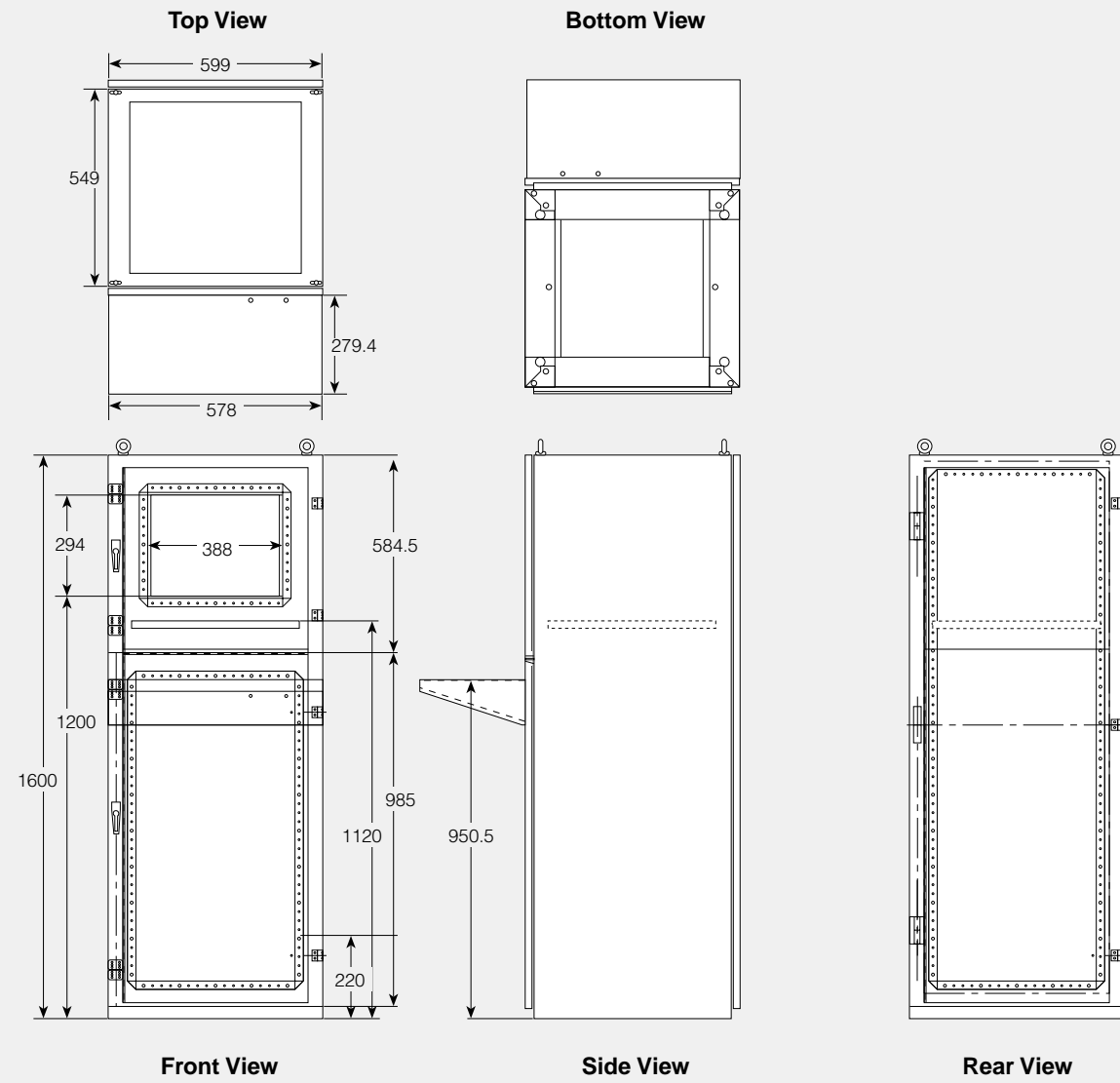
Dimensions in millimeters (mm) unless otherwise indicated.

**Enclosure**

- B1 = Total width
- B2 = Enclosure width with handle strips
- B3 = Clearance opening, front
- B4 = Spacing of mounting plate attachment
- B5 = Maximum front cutout, width
- B6 = Hinged width for depth 100 mm
- B7 = Hinged width for depth 138 mm
- H1 = Total height
- H2 = Enclosure height with handle strips
- H3 = Spacing of mounting plate attachment
- H4 = Maximum front cutout, height
- H5 = Distance from base to mounting plate attachment

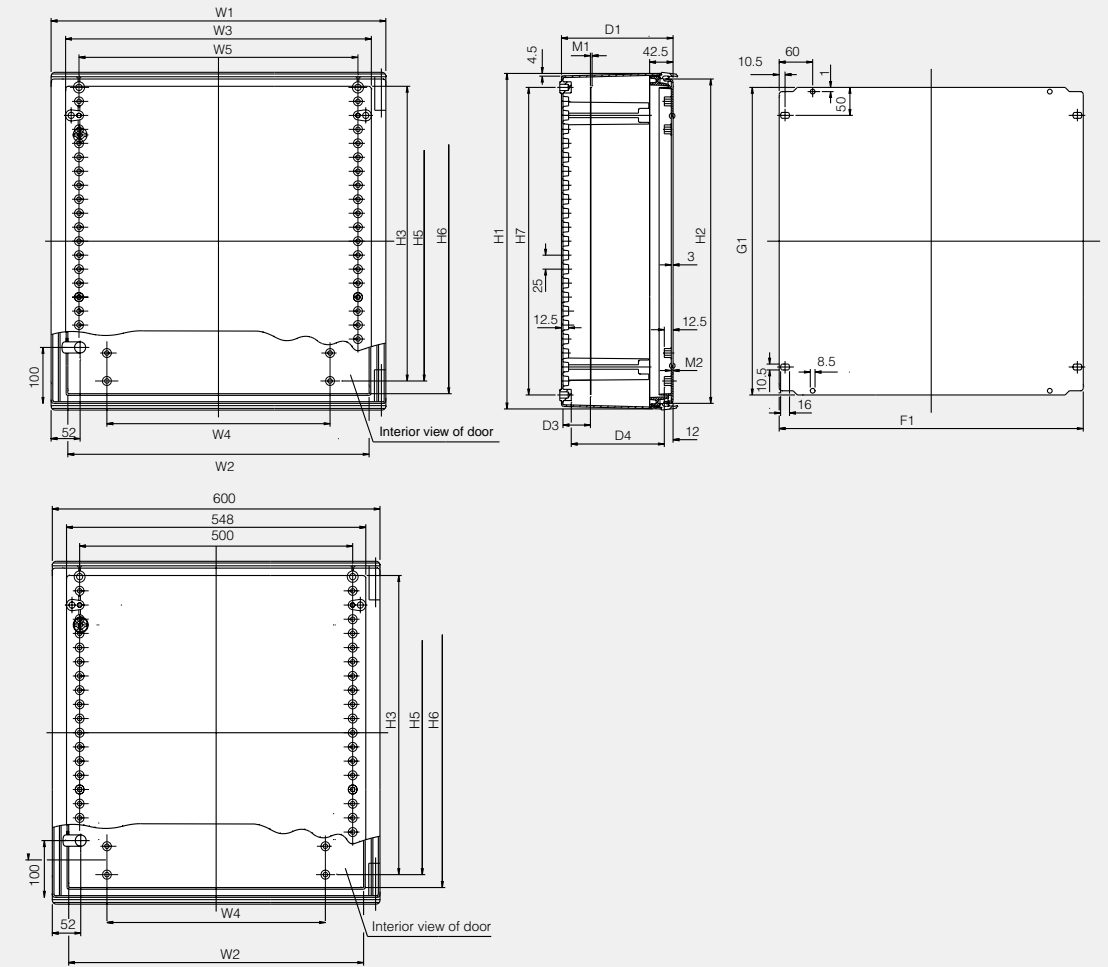


### Technical Specifications PC Operator Interface Enclosures



Enclosure								
Part No.	Configuration	Keyboard storage	Exact dimensions					
			inches			mm		
			H	W	D	H	W	D
4650304	Polycarbonate	Shelf	63	24	24	1600	600	600
4650305	Safety glass	Shelf	63	24	24	1600	600	600

### Technical Specifications KS Fiberglass Enclosures



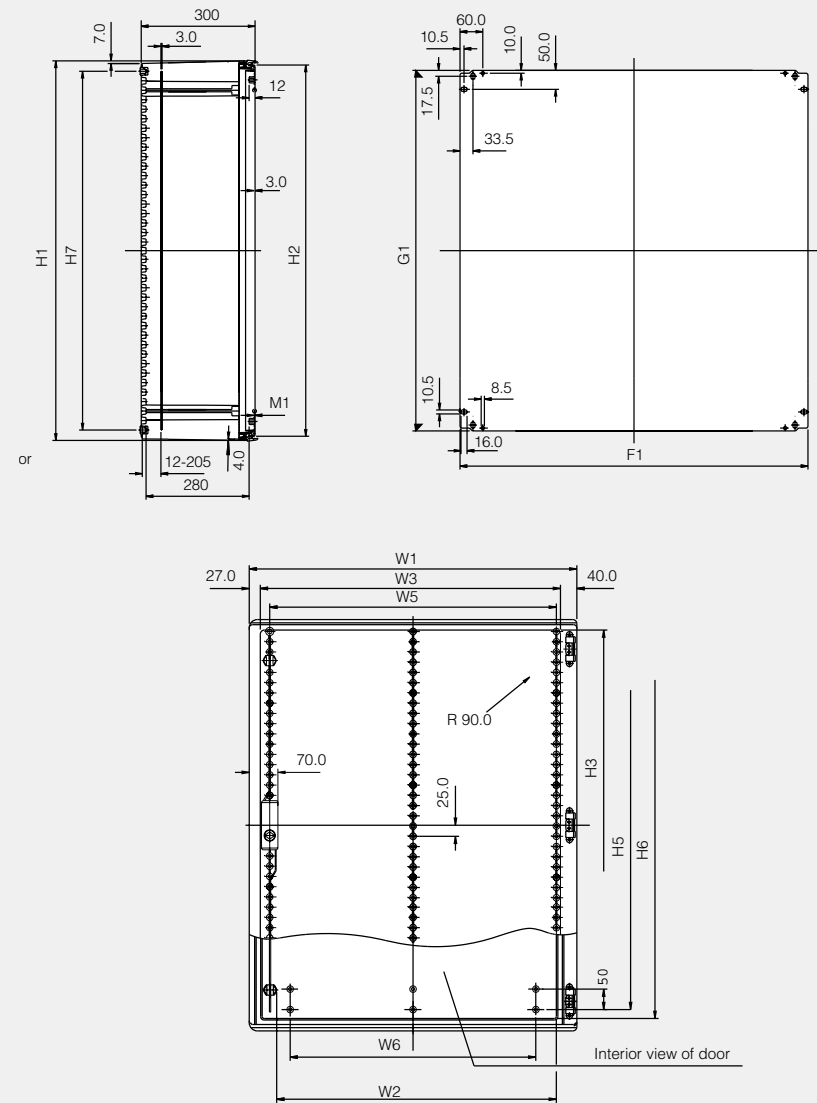
Enclosure						
Height (H1)	inches	13.78	15.75	15.75	23.62	23.62
	mm	350	400	400	600	600
Width (W1)	inches	9.84	11.81	15.75	15.75	23.62
	mm	250	300	400	400	600
Depth (D1)	inches	5.91	7.87	7.87	7.87	7.87
	mm	150	200	200	200	200
<b>Part No.</b>		<b>1432600</b>	<b>1434600</b>	<b>1444600</b>	<b>1446600</b>	<b>1466600</b>
Door(s)		1	1	1	1	1
Weight	lbs	10.1	13.6	14.3	25.3	35.0
	kg	4.6	6.0	6.5	11.5	15.9

Dimensions in millimeters (mm) unless otherwise indicated.

Detailed Dimensions																		
Part No.	Height dimensions						Width dimensions					Depth dimensions				Mounting panel		
	H1	H2	H3	H5	H6	H7	W1	W2	W3	W4	W5	D1	D3	D4	M1	M2	F1	G1
1432600	350	330	306	250	295	300	250	190	200	75	150	150	12-55	130	2.0	3.0	195	300
1434600	400	380	355	300	345	350	300	240	249	100	200	200	12-105	180	2.0	3.0	245	350
1444600	400	380	354	300	345	350	400	340	458	200	300	200	12-105	180	2.5	3.2	345	350
1446600	600	580	554	500	545	550	400	340	348	200	300	200	12-105	180	2.5	3.5	345	550
1466600	600	580	554	500	545	550	600	540	548	400	500	200	12-105	180	2.5	3.5	545	550

Dimensions in millimeters (mm) unless otherwise indicated.

### Technical Specifications KS Fiberglass Enclosures



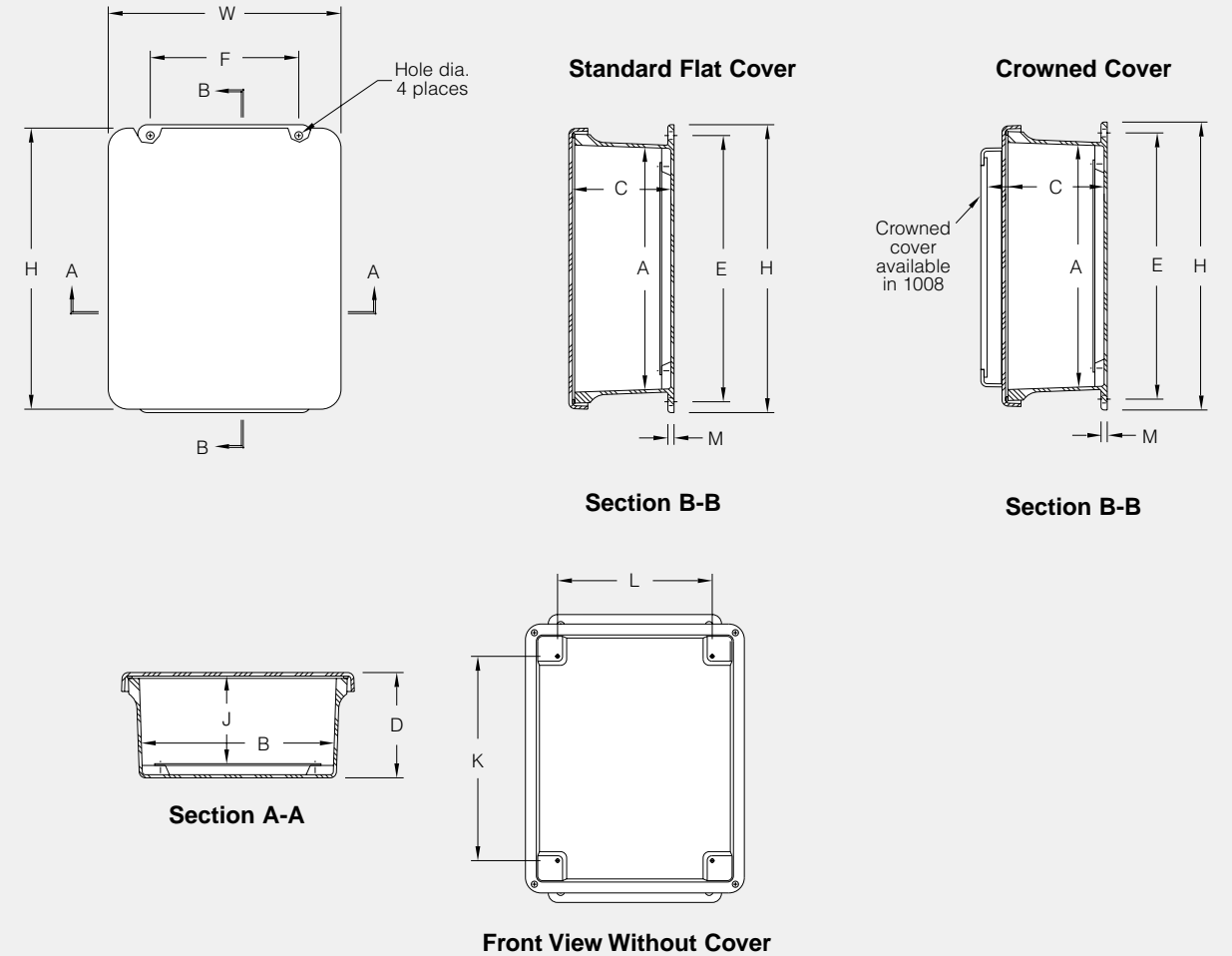
Enclosure				
Height (H1)	inches		31.50	39.37
	mm		800	1000
Width (W1)	inches		23.62	31.50
	mm		600	800
Depth (D1)	inches		11.81	11.81
	mm		300	300
<b>Part No.</b>			<b>1468600</b>	<b>1480600</b>
Door(s)			1	1
Weight	lbs.		53.5	85.9
	kg		24.3	39.0

Dimensions in millimeters (mm) unless otherwise indicated.

Detailed Dimensions														
Part No.	H1	H2	H3	H5	H6	H7	W1	W2	W3	W5	W6	M1	F1	G1
<b>1468600</b>	800	780	753	700	740	750	600	485	533	600	400	3.7	750	517
<b>1480600</b>	100	980	953	900	940	950	800	685	733	700	600	3.7	950	717

Dimensions in millimeters (mm) unless otherwise indicated.

### Technical Specifications Screw Cover Junction Boxes

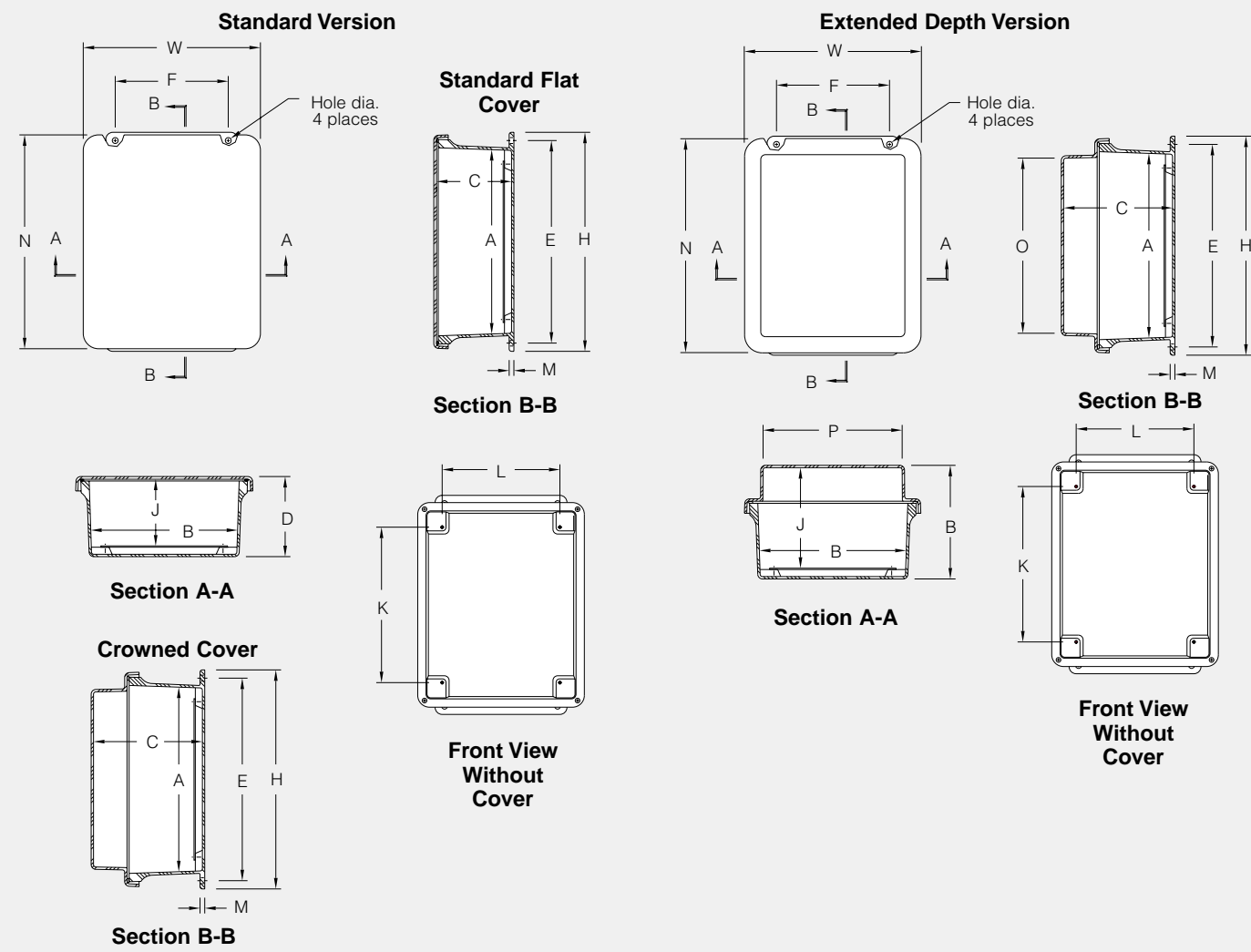


Enclosure														
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers					Hole dia.		
	H	W	D	A	B	C	H	W	J	K	L		M	N
<b>L FJ604NFSC</b>	7.50	5.43	4.75	5.84	3.85	4.45	6.75	2	4	4.25	2.25	.25	7.39	.31
<b>L FJ606NFSC</b>	7.50	7.50	4.75	5.72	5.72	4.45	6.75	4	4	4.25	4.25	.25	7.52	.31
<b>L FJ806NFSC</b>	9.62	7.50	4.74	7.73	5.74	4.45	8.88	4	4	6.25	4.25	.25	9.5	.31
<b>L FJ1008NFSC</b>	11.62	9.41	4.25	9.73	7.73	3.98	10.75	6	3.5	8.25	6.25	.25	11.35	.31
<b>L FJ1210NFSC</b>	13.56	11.43	5.21	11.79	9.80	4.94	12.75	8	4.5	10.25	8.25	.25	13.41	.31
<b>L FJ1412NFSC</b>	15.50	13.50	6.25	13.53	11.55	5.94	14.62	10	5.37	12.25	10.25	.25	15.47	.31
<b>L FJ1614NFSC</b>	17.53	15.46	6.23	15.63	13.60	5.94	16.75	12	5.36	14.25	12.25	.25	17.45	.31
<b>L FJ1816NFSC</b>	19.62	17.61	8.82	17.69	15.69	8.45	18.88	12	7.99	16.25	14.25	.25	19.61	.31
<b>L FJ2016NFSC</b>	22.00	17.68	8.83	19.72	15.72	8.45	21.25	10	8	18.25	14.25	.25	21.68	.31



### Technical Specifications

#### Hinged Screw Cover Junction Boxes

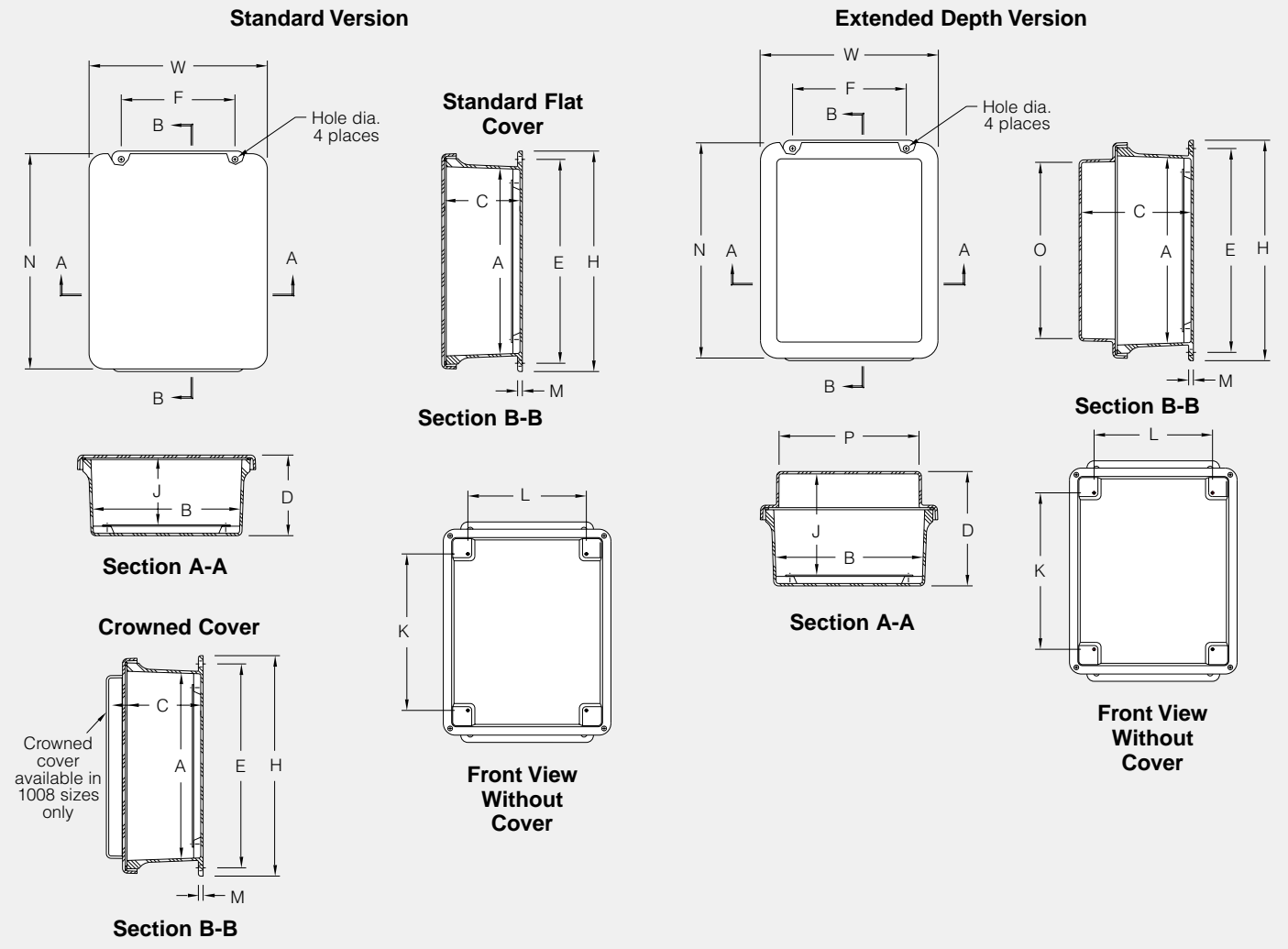


Standard Enclosure														
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N	Hole dia.
	H	W	D	A	B	C	H	W						
L FJ604CHNFSC	7.50	5.47	6.22	5.84	3.85	5.95	6.75	2	4	4.25	2.25	.25	7.39	.31
L FJ606CHNFSC	7.50	7.50	4.75	5.72	5.72	4.45	6.75	4	4	4.25	4.25	.25	7.52	.31
L FJ806CHNFSC	9.62	7.50	4.74	7.73	5.74	4.45	8.88	4	4	6.25	4.25	.25	9.5	.31
L FJ1008CHNFSC	11.62	9.41	4.25	9.73	7.73	3.98	10.75	6	3.5	8.25	6.25	.25	11.35	.31
L FJ1210CHNFSC	13.56	11.43	5.21	11.79	9.80	4.94	12.75	8	4.5	10.25	8.25	.25	13.41	.31
L FJ1412CHNFSC	15.50	13.50	6.25	13.53	11.55	5.94	14.62	10	5.37	12.25	10.25	.25	15.47	.31
L FJ1614CHNFSC	17.53	15.46	6.23	15.63	13.60	5.94	16.75	12	5.36	14.25	12.25	.25	17.45	.31
L FJ1816CHNFSC	19.62	17.61	8.82	17.69	15.69	8.45	18.88	12	7.99	16.25	14.25	.25	19.61	.31
L FJ2016CHNFSC	22.00	17.68	8.83	19.72	15.72	8.45	21.25	10	8	18.25	14.25	.25	21.68	.31

Extended Depth Enclosure																
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N	O	P	Hole dia.
	H	W	D	A	B	C	H	W								
L FJ604CHNFSCX	7.50	5.47	6.22	5.84	3.85	5.95	6.75	2	5.49	4.25	2.25	.25	7.45	5.31	3.34	.31
L FJ606CHNFSCX	7.50	7.52	6.22	5.72	5.72	5.95	6.75	4	5.49	4.25	4.25	.25	7.52	5.34	5.31	.31
L FJ806CHNFSCX	9.62	7.46	6.22	7.73	5.74	5.95	8.88	4	5.49	6.25	4.25	.25	9.36	7.25	5.28	.31
L FJ1008CHNFSCX	11.62	9.37	6.61	9.73	7.73	6.36	10.75	6	5.91	8.25	6.25	.25	11.38	9.3	7.38	.31
L FJ1210CHNFSCX	13.56	11.43	6.61	11.79	9.80	6.32	12.75	8	5.87	10.25	8.25	.25	13.41	11.2	9.23	.31
L FJ1412CHNFSCX	15.50	13.38	7.69	13.53	11.55	7.45	14.62	10	6.87	12.25	10.25	.25	15.42	13.2	11.16	.31
L FJ1614CHNFSCX	17.53	15.43	7.71	15.63	13.60	7.45	16.75	12	6.87	14.25	12.25	.25	17.43	15.2	13.24	.31
L FJ1816CHNFSCX	19.62	17.48	10.62	17.69	15.69	10.31	18.88	12	9.86	16.25	14.25	.25	19.49	17.25	15.25	.31
L FJ2016CHNFSCX	22.00	17.56	10.64	19.72	15.72	10.33	21.25	10	9.87	18.25	14.25	.25	21.56	19.31	15.39	.31

### Technical Specifications

#### Lockable Quick Release Junction Boxes

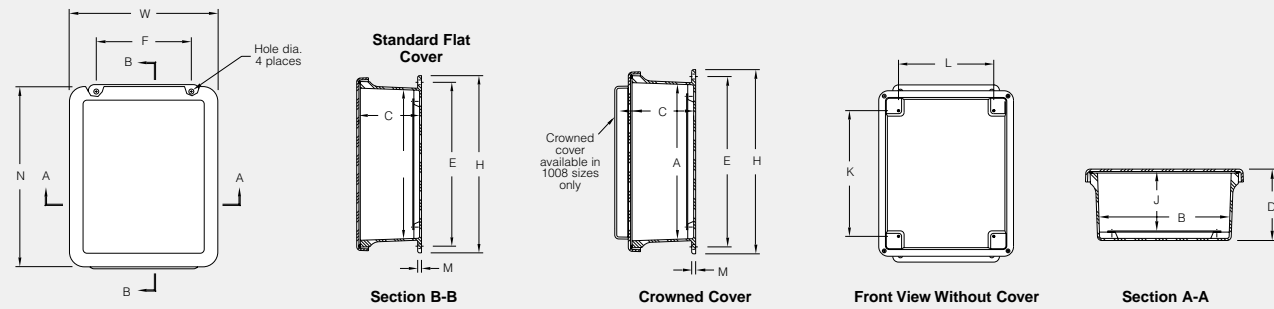


Standard Enclosure														
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N	Hole dia.
	H	W	D	A	B	C	H	W						
L FJ604CHNFQ	7.50	5.43	4.75	5.84	3.85	4.45	6.75	2	4	4.25	2.25	.25	7.39	.31
L FJ606CHNFQ	7.50	7.50	4.75	5.72	5.72	4.45	6.75	4	4	4.25	4.25	.25	7.52	.31
L FJ806CHNFQ	9.62	7.50	4.74	7.73	5.74	4.45	8.88	4	4	6.25	4.25	.25	9.5	.31
L FJ1008CHNFQ	11.62	9.41	4.25	9.73	7.73	3.98	10.75	6	3.5	8.25	6.25	.25	11.35	.31
L FJ1210CHNFQ	13.56	11.43	5.21	11.79	9.80	4.94	12.75	8	4.5	10.25	8.25	.25	13.41	.31
L FJ1412CHNFQ	15.50	13.50	6.25	13.53	11.55	5.94	14.62	10	5.37	12.25	10.25	.25	15.47	.31
L FJ1614CHNFQ	17.53	15.46	6.23	15.63	13.60	5.94	16.75	12	5.36	14.25	12.25	.25	17.45	.31
L FJ1816CHNFQ	19.62	17.61	8.82	17.69	15.69	8.45	18.88	12	7.99	16.25	14.25	.25	19.61	.31
L FJ2016CHNFQ	22.00	17.68	8.83	19.72	15.72	8.45	21.25	10	8	18.25	14.25	.25	21.68	.31

Extended Depth Enclosure																
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N	O	P	Hole dia.
	H	W	D	A	B	C	H	W								
L FJ604CHNFQX	7.50	5.47	6.22	5.84	3.85	5.95	6.75	2	5.49	4.25	2.25	.25	7.45	5.31	3.34	.31
L FJ606CHNFQX	7.50	7.52	6.22	5.72	5.72	5.95	6.75	4	5.49	4.25	4.25	.25	7.52	5.34	5.31	.31
L FJ806CHNFQX	9.62	7.46	6.22	7.73	5.74	5.95	8.88	4	5.49	6.25	4.25	.25	9.36	7.25	5.28	.31
L FJ1008CHNFQX	11.62	9.37	6.61	9.73	7.73	6.36	10.75	6	5.91	8.25	6.25	.25	11.38	9.3	7.38	.31
L FJ1210CHNFQX	13.56	11.43	6.61	11.79	9.80	6.32	12.75	8	5.87	10.25	8.25	.25	13.41	11.2	9.23	.31
L FJ1412CHNFQX	15.50	13.38	7.69	13.53	11.55	7.45	14.62	10	6.87	12.25	10.25	.25	15.42	13.2	11.16	.31
L FJ1614CHNFQX	17.53	15.43	7.71	15.63	13.60	7.45	16.75	12	6.87	14.25	12.25	.25	17.43	15.2	13.24	.31
L FJ1816CHNFQX	19.62	17.48	10.62	17.69	15.69	10.31	18.88	12	9.86	16.25	14.25	.25	19.49	17.25	15.25	.31
L FJ2016CHNFQX	22.00	17.56	10.64	19.72	15.72	10.33	21.25	10	9.87	18.25	14.25	.25	21.56	19.31	15.39	.31

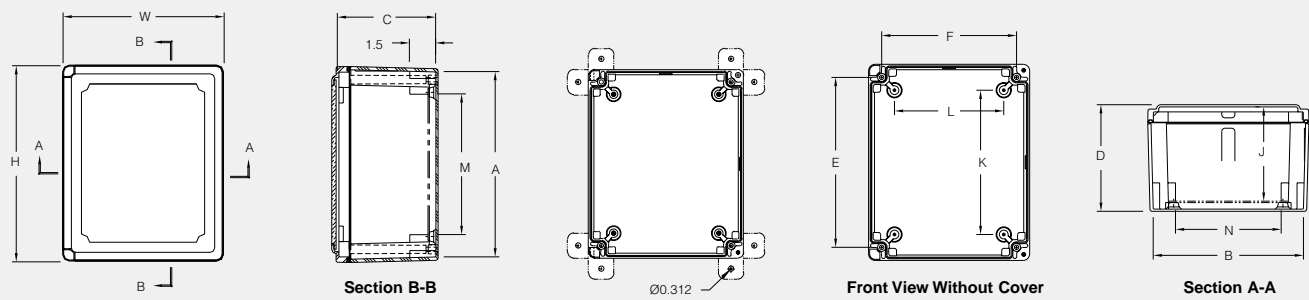
### Technical Specifications

#### Flush Viewing Window Junction Boxes



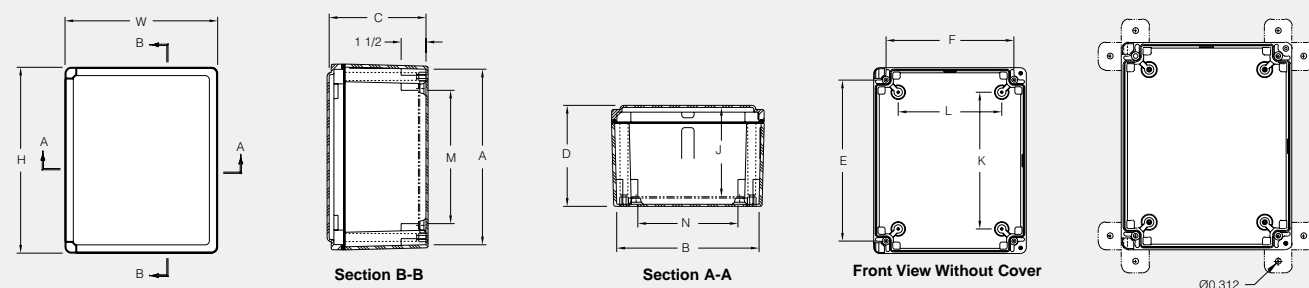
Enclosure														
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N	Hole dia.
	H	W	D	A	B	C	H	W						
L FJ806CHNFQW	9.62	7.50	4.74	7.73	5.74	4.45	8.88	4	4	6.25	4.25	.25	9.5	.31
L FJ1008CHNFQW	11.62	9.41	4.25	9.73	7.73	3.98	10.75	6	3.5	8.25	6.25	.25	11.35	.31
L FJ1210CHNFQW	13.56	11.43	5.21	11.79	9.80	4.94	12.75	8	4.5	10.25	8.25	.25	13.41	.31
L FJ1412CHNFQW	15.50	13.50	6.25	13.53	11.55	5.94	14.62	10	5.37	12.25	10.25	.25	15.47	.31
L FJ1614CHNFQW	17.53	15.46	6.23	15.63	13.60	5.94	16.75	12	5.36	14.25	12.25	.25	17.45	.31
L FJ1816CHNFQW	19.62	17.61	8.82	17.69	15.69	8.45	18.88	12	7.99	16.25	14.25	.25	19.61	.31
L FJ2016CHNFQW	22.00	17.68	8.83	19.72	15.72	8.45	21.25	10	8	18.25	14.25	.25	21.68	.31

#### Hinged Screw Cover Instrumentation Boxes



Hinged Screw Cover Enclosure														
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N	N
	H	W	D	A	B	C	H	W						
L F1707CHNFSC	7.21	7.21	5.09	6.65	6.65	4.84	5.71	5.71	4.39	4.25	4.25	4.04	4.04	4.04
L F1907CHNFSC	9.21	7.21	5.09	8.59	6.59	4.84	7.71	5.71	4.39	6.25	4.25	6.04	4.04	4.04
L F1109CHNFSC	11.21	9.21	6.09	10.59	8.59	5.84	9.71	7.71	5.39	8.25	6.25	8.04	6.04	6.04
L F11311CHNFSC	13.21	11.21	6.59	12.59	10.59	6.34	11.71	9.71	5.89	10.25	8.25	10.04	8.04	8.04
L F11513CHNFSC	15.21	13.21	7.09	14.55	12.55	6.84	13.71	11.71	6.39	12.25	10.25	12.04	10.04	10.04

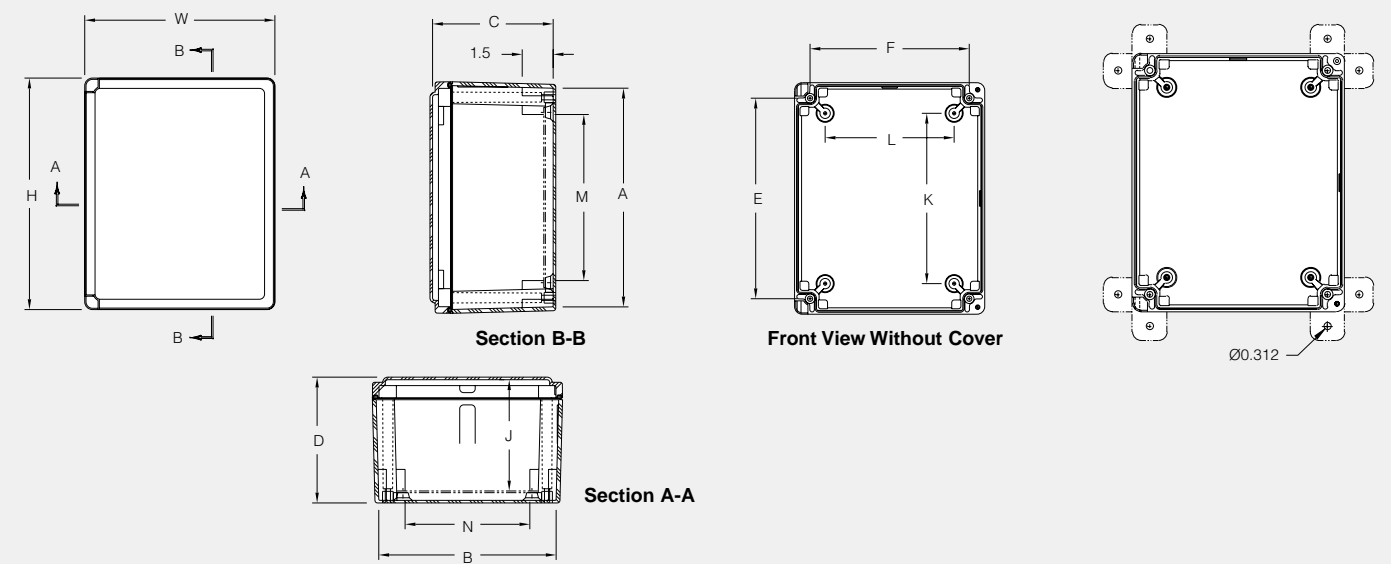
#### Viewing Window Instrumentation Boxes



Viewing Window Enclosure														
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N	N
	H	W	D	A	B	C	H	W						
L F1707CHNFSCW	7.21	7.21	5.09	6.65	6.65	4.84	5.71	5.71	4.39	4.25	4.25	4.04	4.04	4.04
L F1907CHNFSCW	9.21	7.21	5.09	8.59	6.59	4.84	7.71	5.71	4.39	6.25	4.25	6.04	4.04	4.04
L F1109CHNFSCW	11.21	9.21	6.09	10.59	8.59	5.84	9.71	7.71	5.39	8.25	6.25	8.04	6.04	6.04
L F11311CHNFSCW	13.21	11.21	6.59	12.59	10.59	6.34	11.71	9.71	5.89	10.25	8.25	10.04	8.04	8.04
L F11513CHNFSCW	15.21	13.21	7.09	14.55	12.55	6.84	13.71	11.71	6.39	12.25	10.25	12.04	10.04	10.04

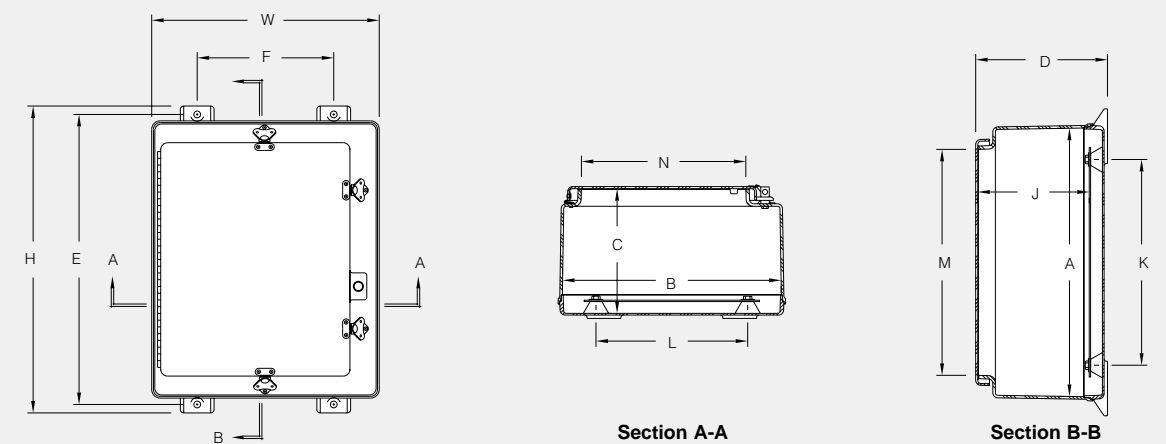
### Technical Specifications

#### Hinged Quick Release Instrumentation Boxes



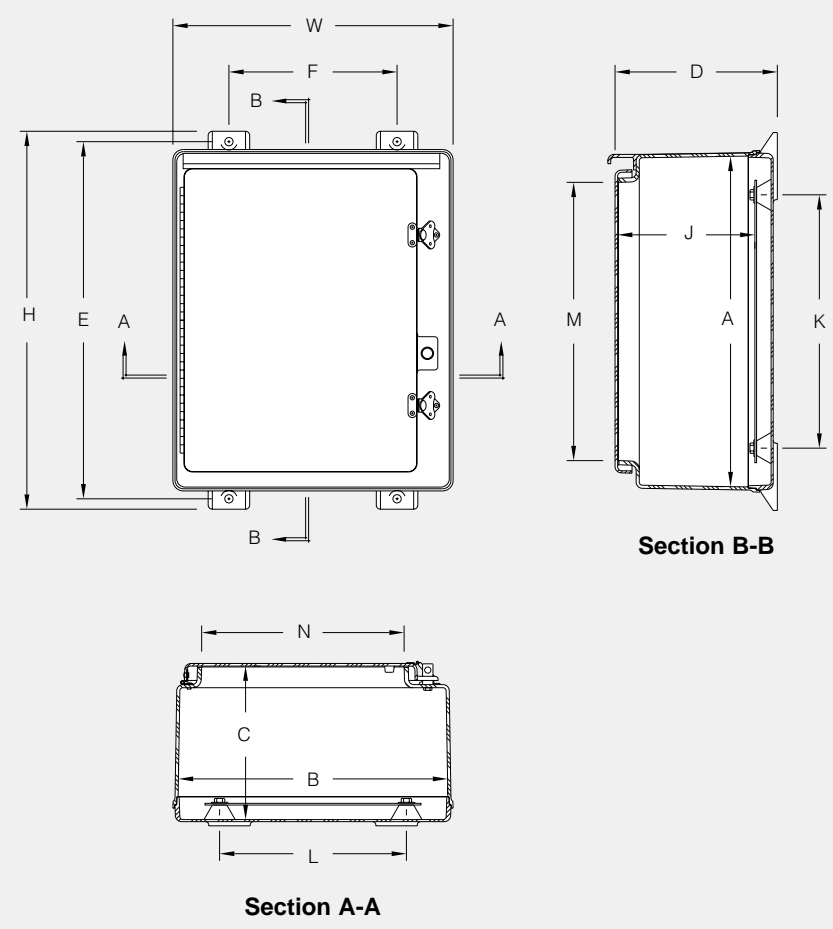
Enclosure														
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N	N
	H	W	D	A	B	C	H	W						
L F1707CHNFQ	7.21	7.21	5.09	6.65	6.65	4.84	4.875	4.875	4.39	4.25	4.25	4.25	4.04	4.04
L F1907CHNFQ	9.21	7.21	5.09	8.59	6.59	4.84	6.875	4.875	4.39	6.25	4.25	6.04	4.04	4.04
L F1109CHNFQ	11.21	9.21	6.09	10.59	8.59	5.84	8.875	6.875	5.39	8.25	6.25	8.04	6.04	6.04
L F11311CHNFQ	13.21	11.21	6.59	12.59	10.59	6.34	10.875	8.875	5.89	10.25	8.25	10.04	8.04	8.04
L F11513CHNFQ	15.21	13.21	7.09	14.55	12.55	6.84	12.875	10.875	6.39	12.25	10.25	12.04	10.04	10.04

#### NEMA 4X Wallmount Boxes



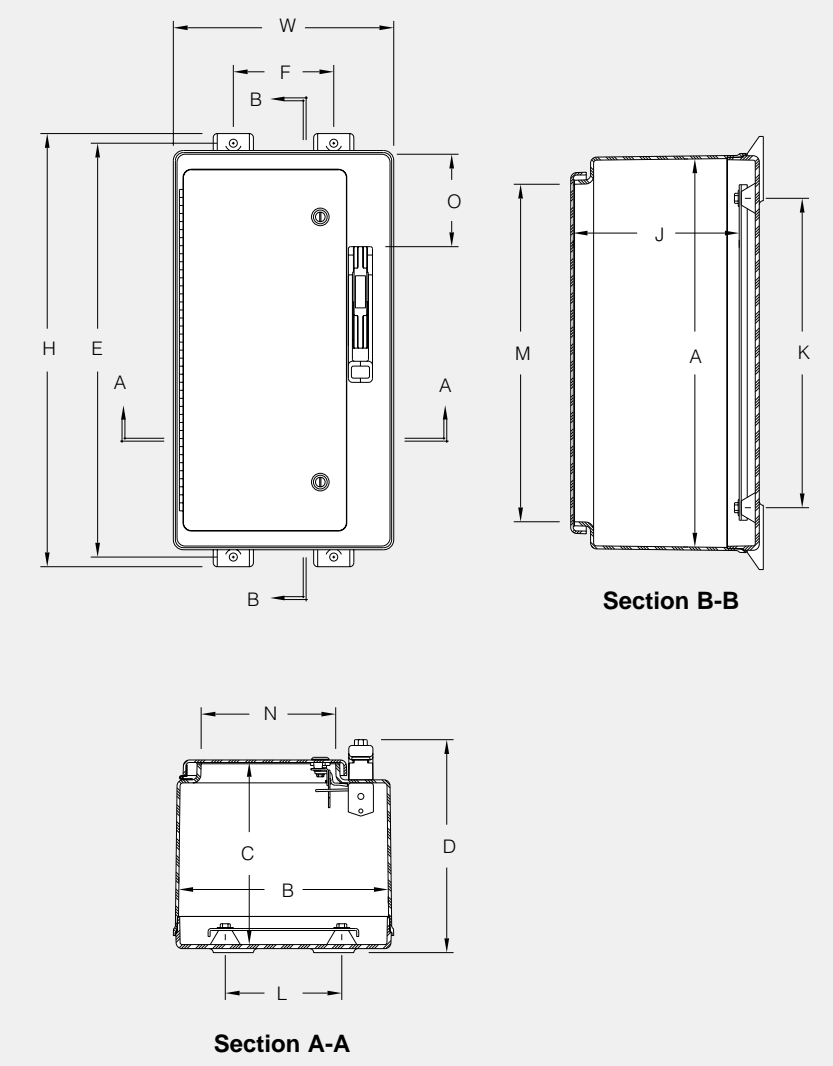
Enclosure													
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	Enclosure opening	
	H	W	D	A	B	C	H	W				M	N
L FW20H1612	22.75	16.87	13.77	19.70	16.04	13.24	21.50	10.12	12.26	15.25	11.25	16.75	12.19
L FW24H2008	27.00	21.24	9.90	24.05	20.39	9.25	25.75	14.00	8.25	19.25	15.25	21.25	16.00
L FW24H2410	27.00	25.24	11.90	24.05	24.39	11.25	25.75	17.87	10.25	19.25	19.25	21.25	20.00
L FW24H2412	27.00	25.24	13.90	24.05	24.39	13.25	25.75	17.87	12.25	19.25	19.25	21.25	20.00
L FW30H2008	32.86	20.99	9.89	29.90	20.14	9.23	31.75	14.25	8.23	25.25	15.25	27.00	16.50
L FW30H2407	33.41	26.32	8.81	30.46	25.47	8.12	32.25	18.50	7.12	25.25	19.25	27.38	21.25
L FW30H2410	33.41	26.32	11.95	30.46	25.47	11.27	32.25	18.50	10.27	25.25	19.25	27.38	21.25
L FW36H3010	39.31	32.50	12.05	36.31	31.69	11.36	38.13	23.88	8.36	31.25	25.25	33.25	27.25
L FW36H3012	39.31	32.50	14.05	36.31	31.69	13.36	38.13	23.88	10.36	31.25	25.25	33.25	27.25
L FW48H3612	51.29	36.62	13.93	48.33	36.22	13.25	50.12	29.25	12.25	43.25	31.25	45.25	32.00
L FW48H3616	51.29	36.62	17.93	48.33	36.22	17.25	50.12	29.26	16.25	43.25	31.25	45.25	32.00

**Technical Specifications**  
NEMA 3R Wallmount Boxes



Part No.	Enclosure														
	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		Enclosure opening						
	H	W	D	A	B	C	H	W	J	K	L	M	N	O	
L FW20R1612HCR	22.75	16.87	14.27	19.70	16.04	13.24	21.50	10.12	12.26	15.25	11.25	16.75	12.19		
L FW24R2008HCR	27.00	21.24	9.90	24.05	20.39	9.25	25.75	14.00	8.25	19.25	15.25	21.25	16.00		
L FW24R2410HCR	27.00	25.24	11.90	24.05	24.39	11.25	25.75	17.87	10.25	19.25	19.25	21.25	20.00		
L FW30R2410HCR	33.41	26.32	11.95	30.46	25.47	11.27	32.25	18.50	10.27	25.25	19.25	27.38	21.25		
L FW30R2412HCR	33.41	26.32	13.79	30.46	25.47	13.10	32.25	18.50	12.10	25.25	19.25	27.38	21.25		
L FW36R3010HCR	39.31	32.50	12.05	36.31	31.69	11.36	38.13	23.88	10.36	31.25	25.25	33.25	27.25		
L FW36R3012HCR	39.31	32.50	14.05	36.31	31.69	13.36	38.13	23.88	12.36	31.25	25.25	33.25	27.25		
L FW48R3612HCR	51.29	36.62	14.43	48.33	36.22	13.25	50.12	29.25	12.25	43.25	31.25	45.25	32.00		
L FW48R3616HCR	51.29	36.62	18.43	48.33	36.22	50.12	29.26	29.26	16.25	43.25	31.25	45.25	32.00		

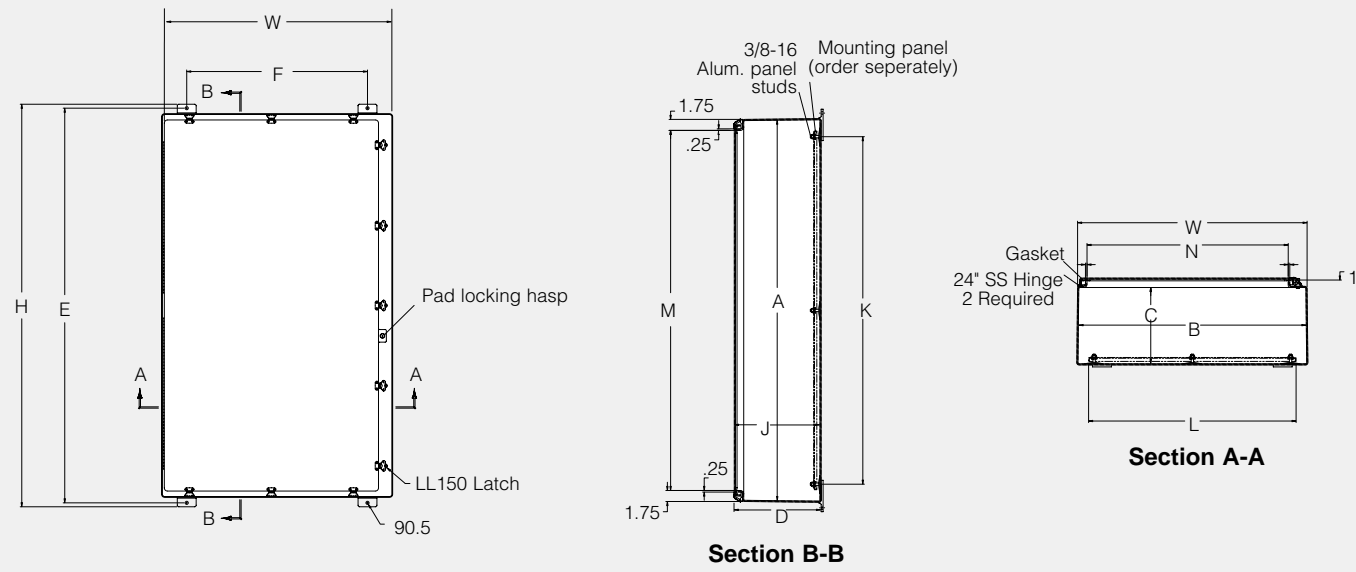
**Technical Specifications**  
Fiberglass Wallmount Boxes



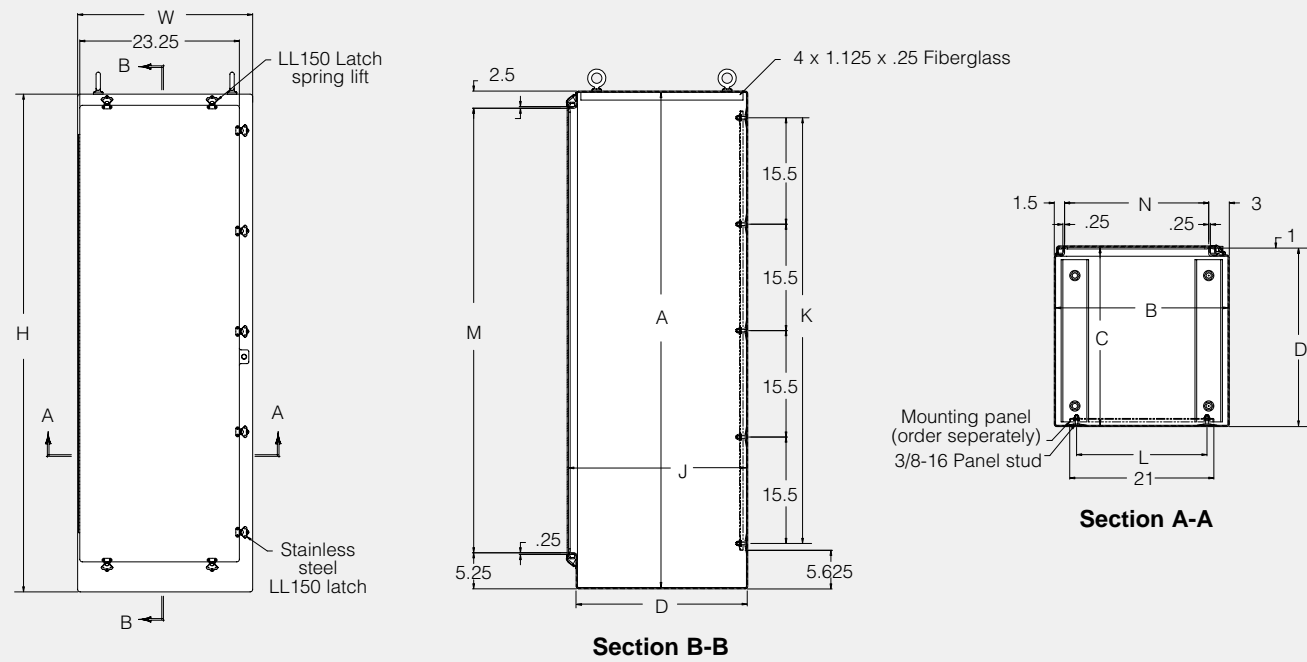
Part No.	Enclosure														
	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		Enclosure opening						
	H	W	D	A	B	C	H	W	J	K	L	M	N	O	
L F16HS10	18.75	10.96	10.25	15.92	10.27	8.53	17.50	7.00	7.8	12	7.5	13.14	6	3.50	
L F20HS16	22.75	16.87	11.00	19.70	16.04	9.24	21.50	10.12	8.26	15.25	11.25	16.75	12.19	3.50	
L F24HS24	27.00	25.24	13.19	24.05	24.39	11.25	25.75	17.87	10.25	19.25	19.25	21.25	20.00	5.75	
L F30HS24	33.41	26.32	13.19	30.46	25.47	11.27	32.25	18.50	10.27	25.25	19.25	27.38	21.25	12.25	
L F36HS30	39.31	32.50	13.31	36.31	31.69	11.36	38.13	23.88	10.36	31.25	25.25	33.25	27.50	12.25	

### Technical Specifications

#### NEMA 4X Freestanding Boxes



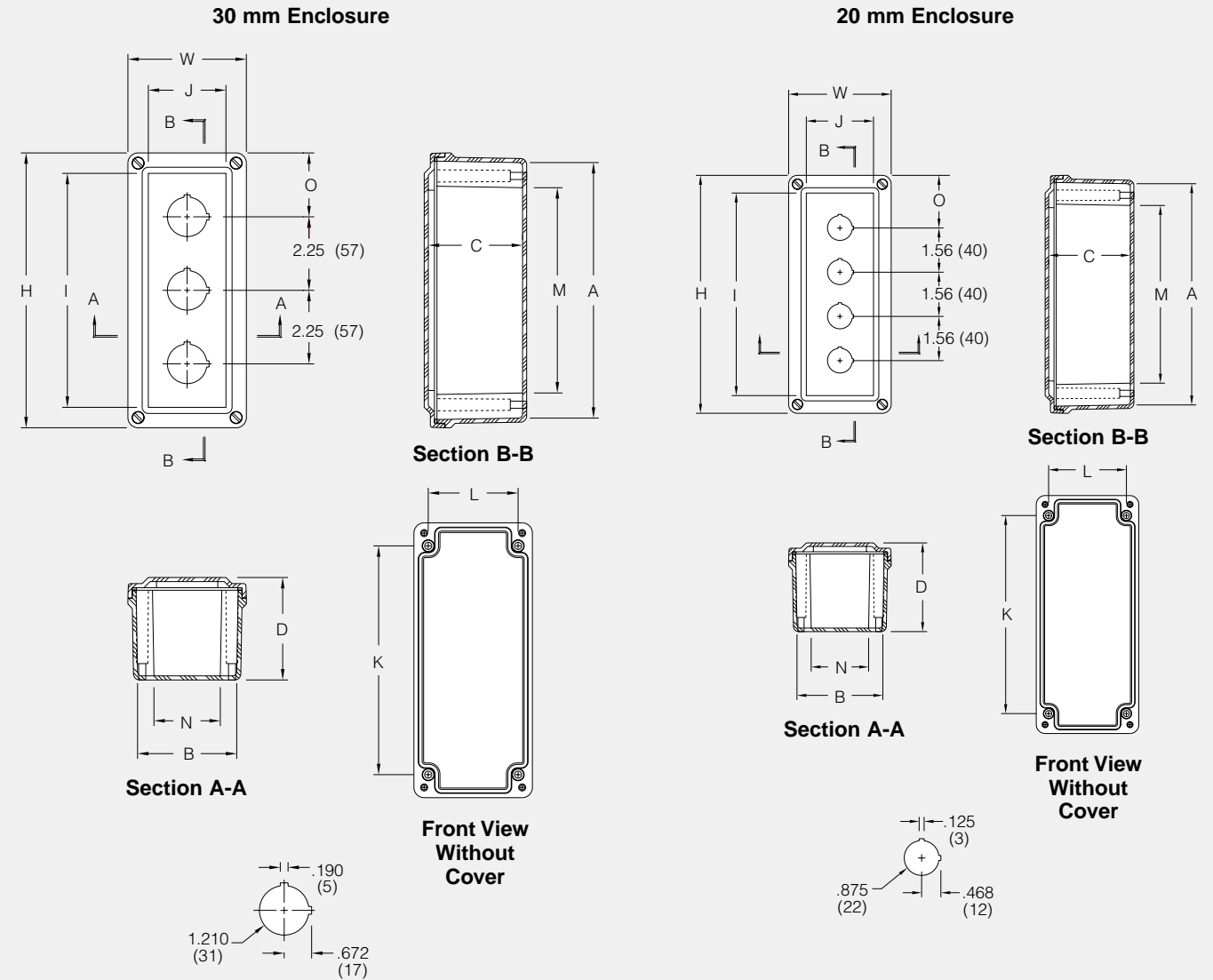
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N
	H	W	D	A	B	C	H	W					
L F60H3612	63.50	36.50	14.12	60.13	36.13	13.44	57.00	33.00	12.44	53.06	31	55.75	32.00
L F60H3616	63.50	36.50	18.12	60.13	36.13	17.44	57.00	33.00	16.44	53.06	31	55.75	32.00



Part No.	Outside dimensions (inches)			Inside dimensions (inches)			Mounting centers		J	K	L	M	N
	H	W	D	A	B	C	H	W					
L F72H2525FS	72.50	25.50	26.38	72.00	25.00	25.75	64.00	21.00	24.74	62	19	64.75	21.00
L F72H4925FSDD	72.50	49.50	26.38	72.00	49.00	25.75	64.00	22.00	24.74	62	20	64.75	21.00

### Technical Specifications

#### 30/22 mm Pushbutton Enclosures



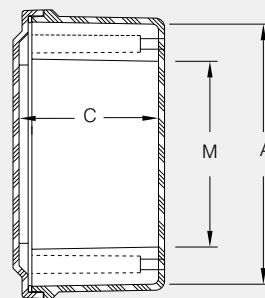
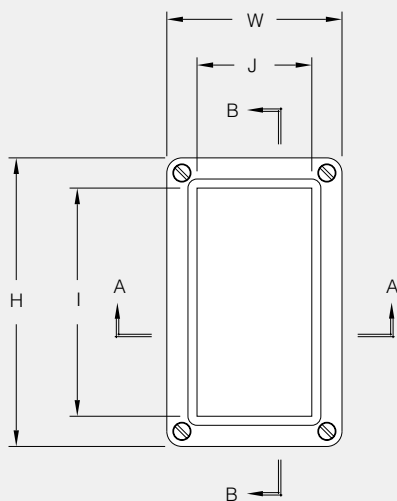
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			I	J	K	L	M	N	O
	H	W	D	A	B	C							
L F1PB	6.63	3.81	3.89	6.00	3.19	5.31	5.31	2.5	4.88	2.94	4.13	2.19	3.31
L F2PB	6.63	3.81	3.89	6.00	3.19	3.63	5.31	2.5	4.88	2.94	4.13	2.19	2.19
L F3PB	8.88	3.81	3.89	8.26	3.19	3.63	7.56	2.5	7.13	2.94	6.38	2.19	2.19
L F4PB	11.13	3.81	3.89	10.51	3.19	3.63	9.81	2.5	9.37	2.94	8.63	2.19	2.19
L F5PB	13.78	3.63	3.14	13.19	3.03	2.87	12.53	2.38	12.37	2.75	11.66	2.03	2.39

Part No.	Outside dimensions (inches)			Inside dimensions (inches)			I	J	K	L	M	N	O
	H	W	D	A	B	C							
L F1PBGM	6.63	3.81	3.89	6.00	3.19	3.63	5.31	2.5	4.88	2.94	4.13	2.19	3.31
L F2PBGM	6.63	3.81	3.89	6.00	3.19	3.63	5.31	2.5	4.88	2.94	4.13	2.19	2.53
L F3PBGM	6.63	3.81	3.89	6.00	3.19	3.63	5.31	2.5	4.88	2.94	4.13	2.19	1.75
L F4PBGM	8.88	3.81	3.89	8.26	3.19	3.63	7.56	2.5	7.13	2.94	6.38	2.19	2.09
L F5PBGM	11.13	3.81	3.89	10.51	3.19	3.63	9.81	2.5	9.37	2.94	8.63	2.19	2.44

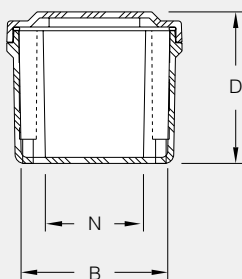


## Technical Specifications

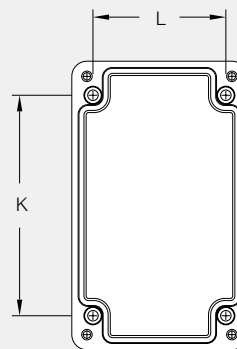
### Small Box Pushbutton Enclosures



**Section B-B**



**Section A-A**



**Front View  
Without  
Cover**

Enclosure												
Part No.	Outside dimensions (inches)			Inside dimensions (inches)			I	J	K	L	M	N
	Width	Height	Depth	Width	Height	Depth						
L FJ332HB	3.72	3.63	2.95	3.13	3.03	2.70	3.22	2.12	2.31	2.75	1.59	2.03
L FJ532HB	5.97	3.63	3.14	5.38	3.03	2.87	4.72	2.38	4.56	2.75	3.84	2.03
L FJ644HB	6.63	3.81	3.89	6.00	3.19	3.63	5.31	2.50	4.88	2.94	4.13	2.19
L FJ844HB	8.88	3.81	3.89	8.26	3.19	3.63	7.56	2.50	7.13	2.94	6.38	2.19
L FJ1144HB	11.13	3.81	3.89	10.51	3.19	3.63	9.81	2.50	9.37	2.94	8.63	2.19

# COMMERCIAL SOLUTIONS

## COMMERCIAL PRODUCTS

Basic Aluminum Outdoor Enclosures ..... COM 1-2

Small Type I Wallmount Enclosures ..... COM 3

Large Type I Wallmount Enclosures ..... COM 4

Small Hinge Cover Boxes ..... COM 5

Large Hinge Cover Boxes ..... COM 6

Lay-In Type I Wireway ..... COM 7-8

Screw Cover Pull Boxes ..... COM 9

Hinge Cover Pull Boxes ..... COM 10

Raintight Screw Cover Enclosures ..... COM 11

Raintight Wiring Trough ..... COM 12

Gasketed Screw Cover Boxes ..... COM 13

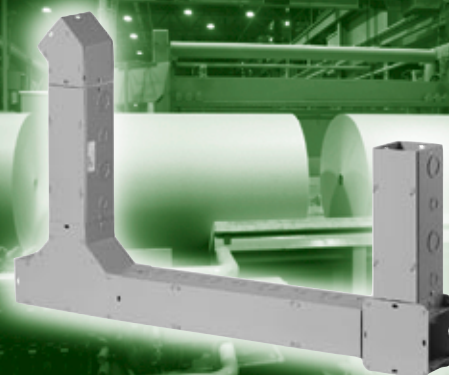
Wallmount Distribution Boxes ..... COM 14

Small Office Mini Racks ..... COM 15

Small Office Cabinets ..... COM 16

19" Modular Enclosures ..... COM 17

Technical Drawings ..... COM 18-33



# Basic Aluminum Outdoor Enclosures



AVAILABLE AUGUST 2001

## Single-Wall Modular Cabinets

CS Outdoor Basic enclosures combine the properties of a compact housing design along with the modular enclosure concept. These single-wall aluminum unibody housings are especially suitable for use in traffic control, utilities distribution and environmental technology.

### Configuration

- NEMA 3R/Enclosure closed on all sides
- 3-point locking system through the Ergoform-S handle
- Cabling via cable entry plates
- 4"/100 mm high plinth
- Rain hood

### Technical Specifications

- Material:**
- *Enclosure/door:* Aluminum AIMg3: 5/64"/2.0 mm
  - *Rain hood:* Aluminum AIMg3: 5/64"/2.0 mm
  - *Plinth:* Aluminum AIMg3: 7.64"/3.0 mm

### Finish/color:

- *Enclosure/door:* powder painted, RAL 7035 light grey
- *Rain hood:* powder painted, RAL 5018 teal green
- *Plinth:* powder painted, RAL 5018 teal green

### Protection Ratings

- NEMA Type**  3R  4  4X  12  13

### Certifications/Approvals

- Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... COM 18

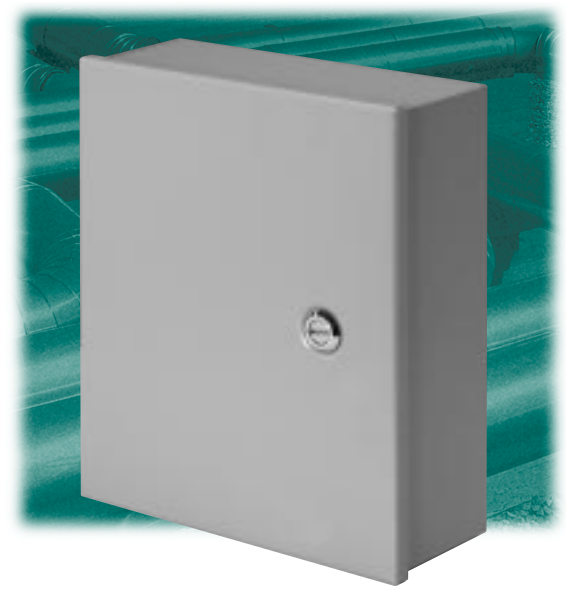
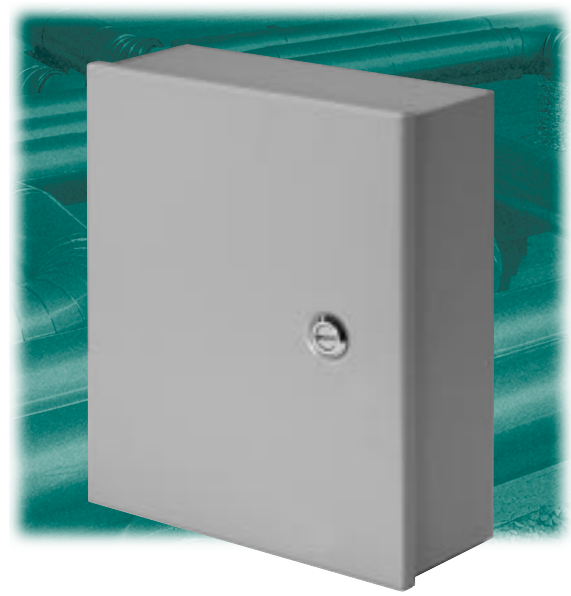
Part No.	Enclosure		
	Outside dimensions (mm)		
	H	W	D
9783040	800	600	400
9783010	800	800	400
9784010	800	1200	400
9783050	1200	600	400
9783020	1200	800	400
9784020	1200	1200	400

Part No.	Accessories						
	Mounting plate	One-piece gland plates	Divided gland plates	19° mounting angles		Concrete base/plinth	Ergoform-S handle
				Spray-finish, RAL 7035	Zinc plated, passivated		
9783040	9765090	9785017	9785011	9785001	9785002	9765182	9785030
9783010	9765097	9785018	9785012	9785001	9785002	9765088	9785030
9784010	2 x 9765090	2 x 9785017	2 x 9785011	9785001	9785002	9765089	9785030
9783050	9765092	9785017	9785011	9785003	9785004	9765182	9785030
9783020	9765095	9785018	9785012	9785003	9785004	9765088	9785030
9784020	2 x 9765092	2 x 9785017	2 x 9785011	9785003	9785004	9765089	9785030



# Small Type 1 Wallmount Enclosures

# Large Type 1 Wallmount Enclosures



### Carbon Steel Commercial Boxes

These small enclosures are ideal for housing electrical and electronic controls. They are designed for indoor use to protect installed equipment in standard environments.

### Carbon Steel Commercial Boxes

These large wallmount enclosures can be used for many different applications. They are designed for indoor use to prevent accidental contact with enclosed equipment in areas where standard service conditions prevail.

#### Configuration

- Continuous steel hinge with removable pin
- Flush, slotted latch
- Mounting panel provisions installed
- Mounting holes in back wall

#### Technical Specifications

- Material:**
- Enclosure/door: 16 gauge carbon steel
- Finish/color:**
- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - Optional mounting panels: painted white

#### Protection Ratings

**NEMA Type**  1  4  4X  12  13

#### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

#### Technical Drawings

Page ..... COM 19

#### Configuration

- Removable doors, attached with butt-hinges
- Flush, non-locking latch
- Single point key locking handle; continuous hinge with removable pin — E 48N3609 only
- Mounting holes in back of enclosure

#### Technical Specifications

- Material**
- Enclosure/door: 14 gauge carbon steel
- Finish/color:**
- Enclosure/door: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - Optional mounting panel: painted white

#### Protection Ratings

**NEMA Type**  1  4  4X  12  13

#### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

#### Technical Drawings

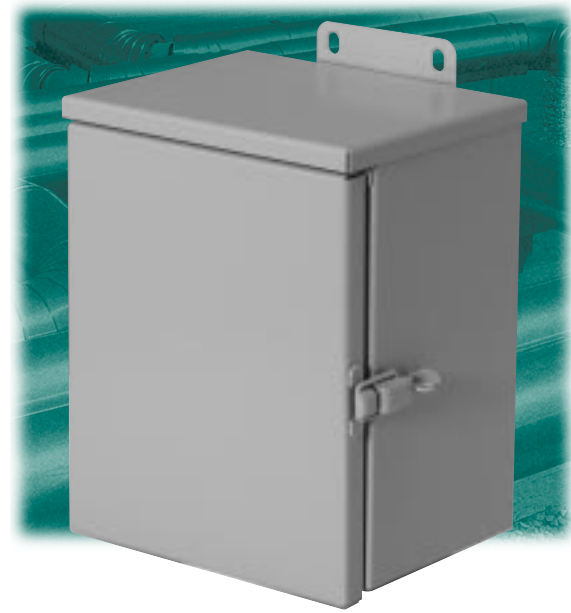
Page ..... COM 20

Enclosure				Mounting Panel			Accessories		
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth	Cylinder lock	Touch-up paint
	H	W	D		H	W			
E 8N64	8.00	6.00	4.00	E 8N6P	6.25	4.25	3.44	E L5	E L21
E 10N84	10.00	8.00	4.00	E 10N8P	8.25	6.25	3.44	E L5	E L21
E 12N104	12.00	10.00	4.00	E 12N10P	10.25	8.25	3.44	E L5	E L21
E 12N124	12.00	12.00	4.00	E 12N12P	10.25	10.25	3.44	E L5	E L21
E 8N66	8.00	6.00	6.00	E 8N6P	6.25	4.25	5.44	E L5	E L21
E 12N106	12.00	10.00	6.00	E 12N10P	10.25	8.25	5.44	E L5	E L21
E 12N126	12.00	12.00	6.00	E 12N12P	10.25	10.25	5.44	E L5	E L21
E 14N126	14.00	12.00	6.00	E 14N12P	12.25	10.25	5.44	E L5	E L21
E 16N126	16.00	12.00	6.00	E 16N12P	14.25	10.25	5.44	E L5	E L21
E 20N126	20.00	12.00	6.00	E 20N12P	18.25	10.25	5.44	E L5	E L21
E 24N126	24.00	12.00	6.00	E 24N12P	22.25	10.25	5.44	E L5	E L21
E 14N128	14.00	12.00	8.00	E 14N12P	12.25	10.25	7.44	E L5	E L21

Enclosure				Mounting Panel			Accessories		
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth	Cylinder lock kit	Touch-up paint
	H	W	D		H	W			
E 16N12A	16.00	12.00	6.63	E 16N12P2	13.00	10.50	6.00	E L5	E L21
E 16N16A	16.00	16.00	6.63	E 16N16P2	13.00	14.50	6.00	E L5	E L21
E 20N16A	20.00	16.00	6.63	E 20N16P	17.00	14.50	6.00	E L5	E L21
E 20N20A	20.00	20.00	6.63	E 20N20P	17.00	18.50	6.00	E L5	E L21
E 24N16A	24.00	16.00	6.63	E 24N16P	21.00	14.50	6.00	E L5	E L21
E 24N20A	24.00	20.00	6.63	E 24N20P	21.00	18.50	6.00	E L5	E L21
E 24N24A	24.00	24.00	6.63	E 24N24P	21.00	22.50	6.00	E L5	E L21
E 30N20A	30.00	20.00	6.63	E 30N20P	27.00	18.50	6.00	E L5	E L21
E 30N24A	30.00	24.00	6.63	E 30N24P	27.00	22.50	6.00	E L5	E L21
E 36N24A	36.00	24.00	6.63	E 36N24P	33.00	22.50	6.00	E L5	E L21
E 36N30A	36.00	30.00	6.63	E 36N30P	33.00	28.50	6.00	E L5	E L21
E 20N16B	20.00	16.00	8.63	E 20N16P	17.00	14.50	8.00	E L5	E L21
E 20N20B	20.00	20.00	8.63	E 20N20P	17.00	18.50	8.00	E L5	E L21
E 24N20B	24.00	20.00	8.63	E 24N20P	21.00	18.50	8.00	E L5	E L21
E 24N24B	24.00	24.00	8.63	E 24N24P	21.00	22.50	8.00	E L5	E L21
E 30N24B	30.00	24.00	8.63	E 30N24P	27.00	22.50	8.00	E L5	E L21
E 30N30B	30.00	30.00	8.63	E 30N30P	27.00	28.50	8.00	E L5	E L21
E 36N24B	36.00	24.00	8.63	E 36N24P	33.00	22.50	8.00	E L5	E L21
E 36N30B	36.00	30.00	8.63	E 36N30P	33.00	28.50	8.00	E L5	E L21
E 48N3609	48.00	36.00	9.25	E 48P36	45.00	33.00	7.50	E L5	E L21
E 30N24C	30.00	24.00	10.63	E 30N24P	27.00	22.50	10.00	E L5	E L21



# Small Hinge Cover Boxes



## Type 3R Galvaneal Steel Wallmount Boxes

These NEMA 3R rated hinge cover boxes are ideal as wiring and junction boxes. Designed for both indoor and outdoor use, they protect installed equipment against rain, sleet and snow, or dripping water.

### Configuration

- Seamless sides, front and back
- Drip shield top
- Continuous steel hinge with removable pin
- Draw-latch with provision for padlock
- Mounting panel provisions installed
- External mounting brackets
- Knockouts for conduit in bottom
- No gasketing

### Technical Specifications

- Materials:**
- *Enclosure/cover:* spot-welded 16 gauge galvaneal steel
- Finish/color:**
- *Enclosure/cover:* polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - *Optional mounting panels:* painted white

### Protection Ratings

**NEMA Type**  1  3R  4X  12  13

### Certifications/Approvals

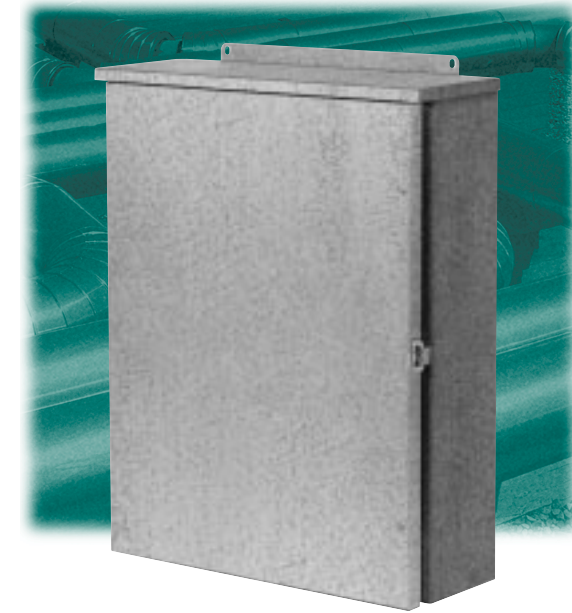
**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **COM 21**

Enclosure				Mounting Panel			Accessories			
Part No.	Outside dimensions (inches)			Part No.	Panel size		Usable depth	Terminal block kit	Terminal rails	Touch-up paint
	H	W	D		H	W				
<b>E 6R64HCR</b>	6.00	6.00	4.00	<b>E 6N6P</b>	4.25	4.25	3.41	–	–	E L21
<b>E 8R64HCR</b>	8.00	6.00	4.00	<b>E 8N6P</b>	6.25	4.25	3.41	E 6JTMA	E 8JS	E L21
<b>E 8R86HCR</b>	8.00	8.00	6.00	<b>E 8N8P</b>	6.25	6.25	5.41	E 8JTMA	E 8JS	E L21
<b>E 10R86HCR</b>	10.00	8.00	6.00	<b>E 10N8P</b>	8.25	6.25	5.41	E 8JTMA	E 10JS	E L21
<b>E 12R106HCR</b>	12.00	10.00	6.00	<b>E 12N10P</b>	10.25	8.25	5.41	E 10JTMA	E 12JS	E L21
<b>E 12R126HCR</b>	12.00	12.00	6.00	<b>E 12N12P</b>	10.25	10.25	5.41	E 12JTMA	E 12JS	E L21

# Large Hinge Cover Boxes



## Type 3R Galvaneal Steel Wallmount Boxes

These NEMA 3R rated hinge cover boxes are ideal as wiring and junction boxes. Designed for both indoor and outdoor use, they protect installed equipment against rain, sleet and snow, or dripping water.

### Configuration

- Seamless sides, front and back
- Drip shield top
- Continuous stainless steel hinge with removable pin
- Captive plated steel screws secure cover
- Hasp and staple for padlock
- Mounting panel provisions installed
- External mounting brackets
- No gasketing or knockouts

### Technical Specifications

- Material:**
- *Enclosure/cover:* 14 or 16 gauge galvaneal steel
- Finish/color:**
- *Enclosure/cover:* polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - *Optional mounting panels:* painted white

### Protection Ratings

**NEMA Type**  1  3R  4X  12  13

### Certifications/Approvals

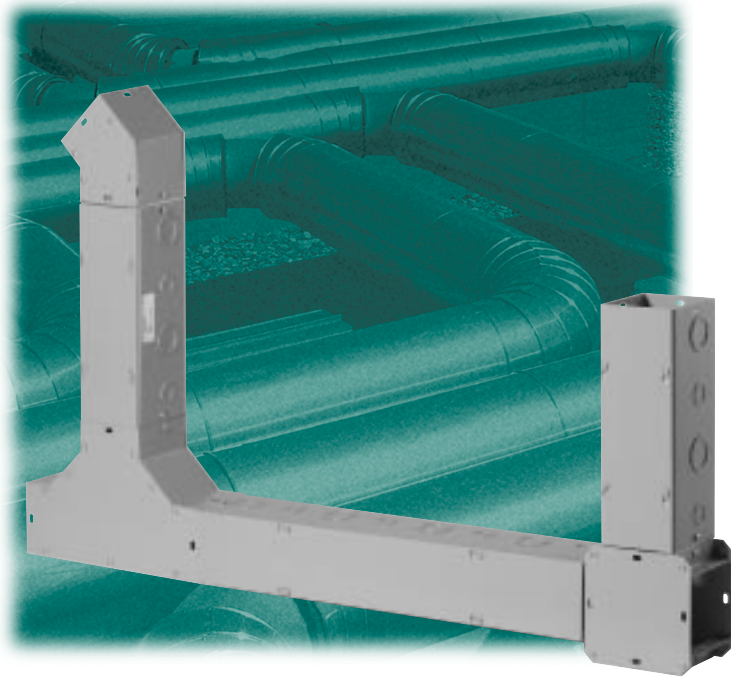
**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **COM 22**

Enclosure					Mounting Panel			Accessories			
Part No.	Outside dimensions (inches)			Material gauge	Part No.	Panel size		Usable depth	Terminal block kit	Terminal rails	Touch-up paint
	H	W	D			H	W				
<b>E 16R166HCR</b>	16.00	16.00	6.00	16	<b>E 16P16</b>	13.00	13.00	4.81	E 16NTMA2	E 16NS	E L21
<b>E 20R166HCR</b>	20.00	16.00	6.00	16	<b>E 20P16</b>	17.00	13.00	4.81	E 16NTMA2	E 20NS	E L21
<b>E 20R208HCR</b>	20.00	20.00	8.00	14	<b>E 20P20</b>	17.00	17.00	6.81	E 20NTMA2	E 20NS	E L21
<b>E 24R208HCR</b>	24.00	20.00	8.00	14	<b>E 24P20</b>	21.00	17.00	6.81	E 20NTMA2	E 24NS	E L21
<b>E 24R248HCR</b>	24.00	24.00	8.00	14	<b>E 24P24</b>	21.00	21.00	6.81	E 24NTMA3	E 24NS	E L21
<b>E 30R248HCR</b>	30.00	24.00	8.00	14	<b>E 30P24</b>	27.00	21.00	6.81	E 24NTMA3	E 30NS	E L21
<b>E 30R3012HCR</b>	30.00	30.00	12.00	14	<b>E 30P30</b>	27.00	27.00	10.81	E 30NTMA3	E 30NS	E L21
<b>E 36R2412HCR</b>	36.00	24.00	12.00	14	<b>E 36P24</b>	33.00	21.00	10.81	E 24NTMA3	E 36NS	E L21
<b>E 36R3012HCR</b>	36.00	30.00	12.00	14	<b>E 36P30</b>	33.00	27.00	10.81	E 30NTMA3	E 36NS	E L21
<b>E 36R3612HCR</b>	36.00	36.00	12.00	14	<b>E 36P36</b>	33.00	33.00	10.81	E 36NTMA3	E 36NS	E L21
<b>E 48R3612HCR</b>	48.00	36.00	12.00	14	<b>E 48P36</b>	45.00	33.00	10.81	E 36NTMA3	E 48NS	E L21

# Lay-In Type 1 Wireway



## Commercial Wireway

Wiring becomes effortless with Rittal Electromate's wireway products because wires and cables are laid in rather than pulled through. Straight sections and fittings are open on one side and later covered up.

### Configuration

- Lay-in type wireways are available in the following sizes:  
2.5" x 2.5"  
4.0" x 4.0"  
6.0" x 6.0"
- Lengths from 12" to 120"
- Available with and without knockouts
- Available in hinge cover and carbon steel/galvanized steel screw cover versions
- Key-hole screw-slot design permits easy attaching of cover to body
- Cover attached with plated screws

### Technical Specifications

#### Carbon Steel Version

##### Material:

- Wireway/covers: 14 or 16 gauge carbon steel

##### Finish/color:

- Wireway/covers: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

#### Galvanized Steel Version

##### Material:

- Wireway/covers: 14 or 16 gauge galvanized steel

##### Finish/color:

- Wireway/covers: unpainted

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Pages** ..... **COM 23-26**

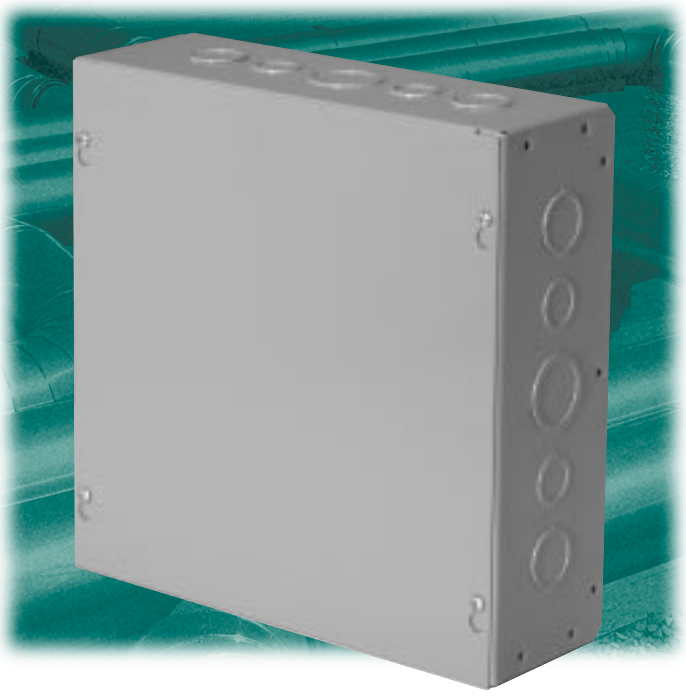
### Hinge Cover Wireway

Part No.			Description
2.50 x 2.50	4.00 x 4.00	6.00 x 6.00	
E W2212HCPK	E W4412HCPK	E W6612HCPK	12.00" Straight Section (with 4 knockouts per side)
E W2212HCP	E W4412HCP	E W6612HCP	12.00" Straight Section (without knockouts)
E W2224HCPK	E W4424HCPK	E W6624HCPK	24.00" Straight Section (with 8 knockouts per side)
E W2224HCP	E W4424HCP	E W6624HCP	24.00" Straight Section (without knockouts)
E W2236HCPK	E W4436HCPK	E W6636HCPK	36.00" Straight Section (with 12 knockouts per side)
E W2236HCP	E W4436HCP	E W6636HCP	36.00" Straight Section (without knockouts)
E W2248HCPK	E W4448HCPK	E W6648HCPK	48.00" Straight Section (with 16 knockouts per side)
E W2248HCP	E W4448HCP	E W6648HCP	48.00" Straight Section (without knockouts)
E W2260HCPK	E W4460HCPK	E W6660HCPK	60.00" Straight Section (with 20 knockouts per side)
E W2260HCP	E W4460HCP	E W6660HCP	60.00" Straight Section (without knockouts)
E W22120HCPK	E W44120HCPK	E W66120HCPK	120.00" Straight Section (with 40 knockouts per side)
E W22120HCP	E W44120HCP	E W66120HCP	120.00" Straight Section (without knockouts)

### Screw Cover Wireway

Carbon Steel Part No.			Description
2.50 x 2.50	4.00 x 4.00	6.00 x 6.00	
E W2212PK	E W4412PK	E W6612PK	12.00" Straight Section (with 4 knockouts per side)
E W2212P	E W4412P	E W6612P	12.00" Straight Section (without knockouts)
E W2224PK	E W4424PK	E W6624PK	24.00" Straight Section (with 8 knockouts per side)
E W2224P	E W4424P	E W6624P	24.00" Straight Section (without knockouts)
E W2236PK	E W4436PK	E W6636PK	36.00" Straight Section (with 12 knockouts per side)
E W2236P	E W4436P	E W6636P	36.00" Straight Section (without knockouts)
E W2248PK	E W4448PK	E W6648PK	48.00" Straight Section (with 16 knockouts per side)
E W2248P	E W4448P	E W6648P	48.00" Straight Section (without knockouts)
E W2260PK	E W4460PK	E W6660PK	60.00" Straight Section (with 20 knockouts per side)
E W2260P	E W4460P	E W6660P	60.00" Straight Section (without knockouts)
E W22120PK	E W44120PK	E W66120PK	120.00" Straight Section (with 40 knockouts per side)
E W22120P	E W44120P	E W66120P	120.00" Straight Section (without knockouts)
E W22AP	E W44AP	E W66AP	Panel Adaptor
E W22C	E W44C	E W66C	Connector
E W22ETXP	E W44ETXP	E W66ETXP	90° Elbow Tee-Cross
E W22HLP	E W44HLP	E W66HLP	45° Elbow
E W22IOLP	E W44IOLP	E W66IOLP	90° In/Outside Elbow
E W22LP	E W44LP	E W66LP	90° Elbow
E W22SLP	E W44SLP	E W66SLP	90° Sweep Elbow
E W22TP	E W44TP	E W66TP	Tee Pull Box
E W22UHP	E W44UHP	E W66UHP	Universal Hanger
E W22SHP	E W44SHP	E W66SHP	Support Hanger
E W22TSFP	E W44TSFP	E W66TSFP	Telescope Fitting
-	E W44RE22P	E W66RE44P	Reducer
E W22LAP	E W44LAP	E W66LAP	90° Transposition Adaptor
E W22ECPK	E W44ECPK	E W66ECPK	End Cap (with 1 knockout)
E W22ECP	E W44ECP	E W66ECP	End Cap (without knockout)
Galvanized Steel Part No.			Description
2.50 x 2.50	4.00 x 4.00	6.00 x 6.00	
E W2212K	E W4412K	E W6612K	12.00" Straight Section (with 4 knockouts per side)
E W2212	E W4412	E W6612	12.00" Straight Section (without knockouts)
E W2224K	E W4424K	E W6624K	24.00" Straight Section (with 8 knockouts per side)
E W2224	E W4424	E W6624	24.00" Straight Section (without knockouts)
E W2236K	E W4436K	E W6636K	36.00" Straight Section (with 12 knockouts per side)
E W2236	E W4436	E W6636	36.00" Straight Section (without knockouts)
E W2248K	E W4448K	E W6648K	48.00" Straight Section (with 16 knockouts per side)
E W2248	E W4448	E W6648	48.00" Straight Section (without knockouts)
E W2260K	E W4460K	E W6660K	60.00" Straight Section (with 20 knockouts per side)
E W2260	E W4460	E W6660	60.00" Straight Section (without knockouts)
E W22120K	E W44120K	E W66120K	120.00" Straight Section (with 40 knockouts per side)
E W22120	E W44120	E W66120	120.00" Straight Section (without knockouts)
E W22A	E W44A	E W66A	Panel Adaptor
E W22C	E W44C	E W66C	Connector
E W22ETX	E W44ETX	E W66ETX	90° Elbow Tee-Cross
E W22HL	E W44HL	E W66HL	45° Elbow
E W22IOL	E W44IOL	E W66IOL	90° In/Outside Elbow
E W22L	E W44L	E W66L	90° Elbow
E W22SL	E W44SL	E W66SL	90° Sweep Elbow
E W22T	E W44T	E W66T	Tee Pull Box
E W22UH	E W44UH	E W66UH	Universal Hanger
E W22SH	E W44SH	E W66SH	Support Hanger
E W22TSF	E W44TSF	E W66TSF	Telescope Fitting
-	E W44RE22	E W66RE44	Reducer
E W22LA	E W44LA	E W66LA	90° Transposition Adaptor
E W22ECK	E W44ECK	E W66ECK	End Cap (with 1 knockout)
E W22EC	E W44EC	E W66EC	End Cap (without knockout)

# Screw Cover Pull Boxes



## Carbon Steel/Galvanized Steel Enclosures

These small enclosures are ideal for housing electrical and electronic controls. They are designed for indoor use to protect installed equipment in standard environments.

### Configuration

- Flat, removable covers
- Covers fastened with plated steel screws
- Key-hole screw-slot design permits easy attaching of cover to body
- Mounting holes on back wall
- Available with or without knockouts
- Covers must be ordered separately for flush installations
- Available in painted steel or unpainted galvanized steel

### Technical Specifications

- Material:**
- Enclosure/cover: 12, 14 or 16 gauge steel or galvanized steel
- Finish/color:**
- Enclosure/cover: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - Galvanized product is unpainted

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page .....COM 27

Enclosure				Accessories				
Part No.		Part No.		Outside dimensions (inches)			Flush covers (See COM 23)	Touch-up paint
With Knockouts		Without Knockouts		H	W	D		
Painted	Galvanized	Painted	Galvanized					
E SCB444PK	-	-	-	4.00	4.00	4.00	E FC44P	E L21
E SCB664PK	E SCB664K	E SCB664P	E SCB664	6.00	6.00	4.00	E FC66P	E L21
E SCB864PK	E SCB864K	E SCB864P	E SCB864	8.00	6.00	4.00	E FC86P	E L21
E SCB884PK	E SCB884K	E SCB884P	E SCB884	8.00	8.00	4.00	E FC88P	E L21
E SCB10104PK	E SCB10104K	E SCB10104P	E SCB10104	10.00	10.00	4.00	E FC1010P	E L21
E SCB12104PK	E SCB12104K	E SCB12104P	E SCB12104	12.00	10.00	4.00	E FC1210P	E L21
E SCB12124PK	E SCB12124K	E SCB12124P	E SCB12124	12.00	12.00	4.00	E FC1212P	E L21
E SCB15124PK	-	-	E SCB15124	15.00	12.00	4.00	E FC1512P	E L21
E SCB18124PK	-	-	-	18.00	12.00	4.00	E FC1812P	E L21
E SCB18126PK	-	-	-	18.00	12.00	6.00	E FC1812P	E L21
E SCB666PK	E SCB666K	E SCB666P	E SCB666	6.00	6.00	6.00	E FC66P	E L21
E SCB886PK	E SCB886K	E SCB886P	E SCB886	8.00	8.00	6.00	E FC88P	E L21
E SCB10106PK	E SCB10106K	E SCB10106P	E SCB10106	10.00	10.00	6.00	E FC1010P	E L21
E SCB12126PK	E SCB12126K	E SCB12126P	E SCB12126	12.00	12.00	6.00	E FC1212P	E L21
E SCB18186PK	E SCB18186K	E SCB18186P	E SCB18186	18.00	18.00	6.00	E FC1818P	E L21
E SCB24246PK	E SCB24246K	E SCB24246P	E SCB24246	24.00	24.00	6.00	E FC2424P	E L21
-	-	E SCB24248P	E SCB24248	24.00	24.00	8.00	E FC2424P	E L21

# Hinge Cover Pull Boxes



## Carbon Steel Commercial Boxes

These Rittal Electromate hinge cover enclosures can be used as a junction box, pull box, service box, switch box, or cutout box.

### Configuration

- Formed steel or butt hinges
- Various sizes of knockouts on side, top and bottom
- Mounting holes on back wall

### Technical Specifications

- Material:**
- Enclosure/cover: 14 or 16 gauge carbon steel
- Finish/color:**
- Enclosure/cover: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

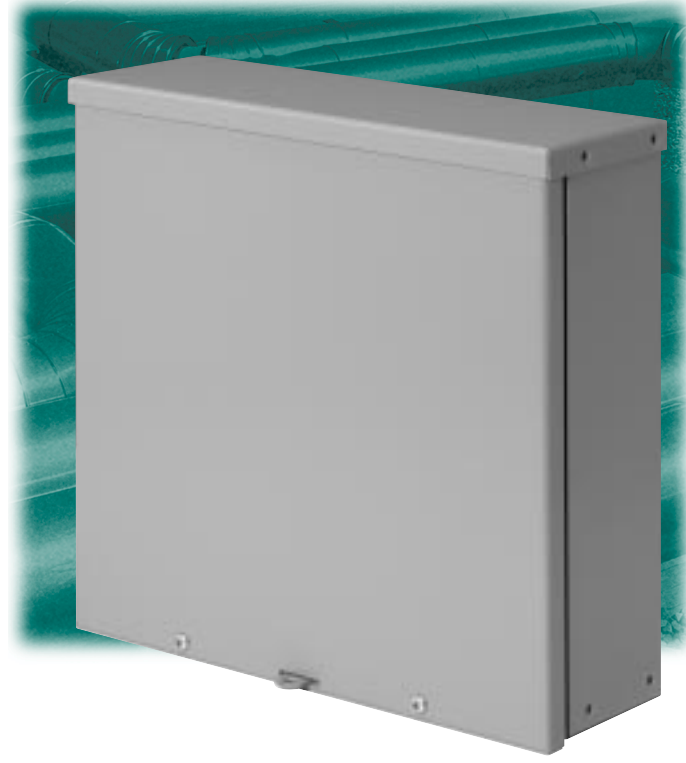
### Technical Drawings

Page .....COM 28

Part No.	Enclosure			Material gauge	Accessories
	Outside dimensions (inches)				
	H	W	D		
E HCB553PK	4.50	5.00	3.06	16	E L21
E HCB664PK	6.00	6.00	4.06	16	E L21
E HCB864PK	8.00	6.00	4.06	16	E L21
E HCB884PK	8.00	8.00	4.06	16	E L21
E HCB10104PK	10.00	10.00	4.06	16	E L21
E HCB1264PK	12.00	6.00	4.06	16	E L21
E HCB1284PK	12.00	8.00	4.06	16	E L21
E HCB12104PK	12.00	10.00	4.06	16	E L21
E HCB12124PK	12.00	12.00	4.06	16	E L21
E HCB18154PK	18.00	15.00	4.06	16	E L21
E HCB12106PK	12.00	10.00	6.06	16	E L21
E HCB12126PK	12.00	12.00	6.06	16	E L21
E HCB18186PK	18.00	18.00	6.06	16	E L21
E HCB24186PK	24.00	18.00	6.06	14	E L21



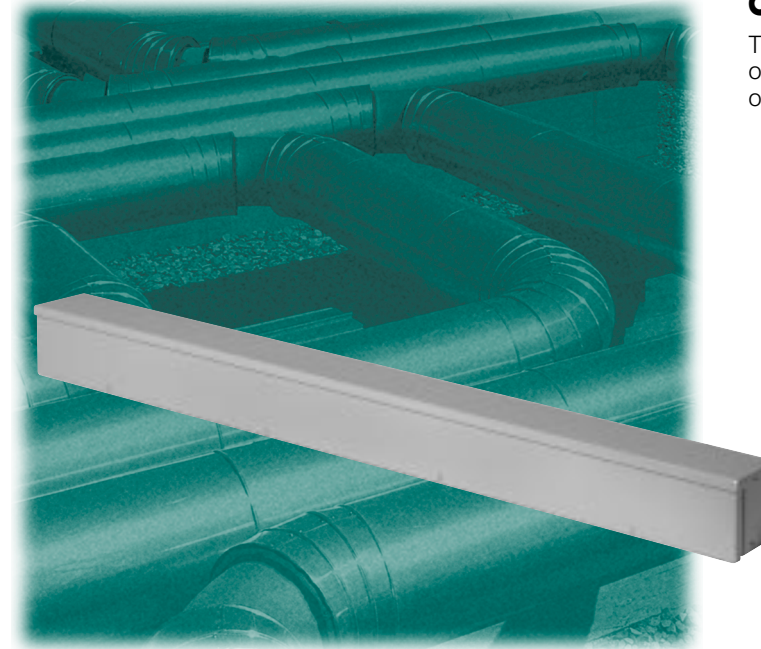
# Raintight Screw Cover Enclosures



## Type 3R Galvaneal Steel/Galvanized Boxes

These Rittal Electromate screw cover enclosures can be used as wiring and junction boxes for outdoor applications. They protect installed equipment against rain, sleet and snow.

# Raintight Wiring Trough



## Galvaneal Steel Commercial Wireway

These Rittal Electromate troughs are designed for indoor and outdoor use. Indoors they protect against dripping water; outdoors they protect wiring against rain, sleet and snow.

### Configuration

- Drip shield top
- Seamless sides, front and back
- Removable, slip-on cover
- Plated steel screws secure cover
- Padlock provision
- Knockouts for conduit in bottom
- Mounting holes on back wall
- Available in painted galvaneal steel or unpainted galvanized steel

### Technical Specifications

- Material:**
- Enclosure/cover: 14 or 16 gauge galvaneal or galvanized steel
- Finish/color:**
- Enclosure/cover: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey
  - Galvanized product is unpainted

### Protection Ratings

- NEMA Type**  1  3R  4X  12  13

### Certifications/Approvals

- Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **COM 29**

### Configuration

- Galvaneal steel troughs are available in the following sizes:  
4.0" x 4.0"  
6.0" x 6.0"  
8.0" x 8.0"
- Lengths from 12" to 72"
- Drip shield top
- Seamless sides, front and back
- Removable, slip-on cover
- Cover fastened with plated steel screws along bottom edge
- Knockouts for conduit on bottom
- Mounting holes on back wall
- No gasketing

### Technical Specifications

- Material:**
- Enclosure/cover: 14 or 16 gauge galvaneal steel
- Finish/color:**
- Enclosure/cover: polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

### Protection Ratings

- NEMA Type**  1  3R  4X  12  13

### Certifications/Approvals

- Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... **COM 30**

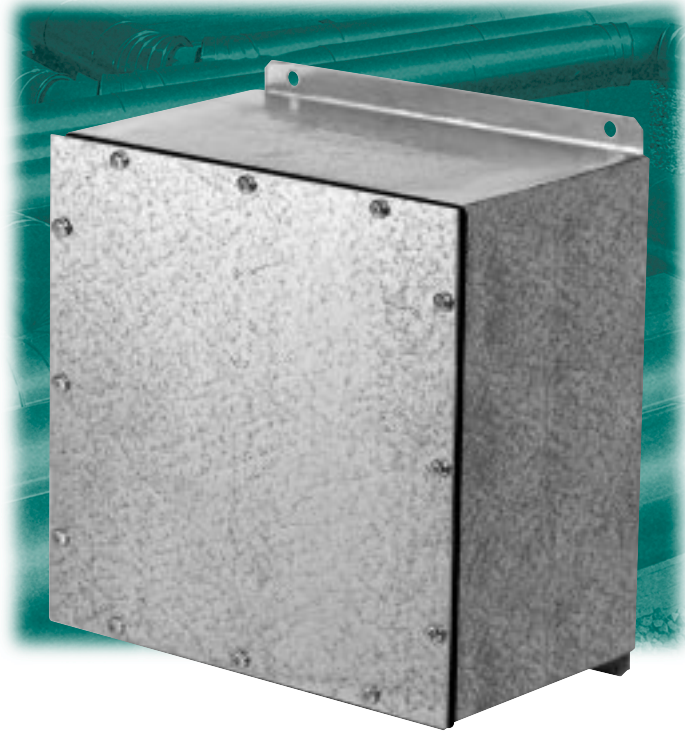
Enclosure					Accessories	
Part No.		Outside dimensions (inches)			Wallmounting brackets	Touch-up paint
Painted	Galvanized	H	W	D		
E RTB664P	E RTB664	6.00	6.00	4.00	E L14	E L21
E RTB884P	E RTB884	8.00	8.00	4.00	E L14	E L21
E RTB10104P	E RTB10104	10.00	10.00	4.00	E L14	E L21
E RTB12124P	E RTB12124	12.00	12.00	4.00	E L14	E L21
E RTB886P	-	8.00	8.00	6.00	E L14	E L21
E RTB10106P	-	10.00	10.00	6.00	E L14	E L21
E RTB12126P	E RTB12126	12.00	12.00	6.00	E L14	E L21
E RTB18126P	E RTB18126	18.00	12.00	6.00	E L14	E L21
E RTB18186P	E RTB18186	18.00	18.00	6.00	E L14	E L21
E RTB18188P	-	18.00	18.00	8.00	E L14	E L21
E RTB24248P	-	24.00	24.00	8.00	E L14	E L21

Part No.	Wiring Trough			Material gauge	Accessories
	Outside dimensions (inches)				
	H	W	D		
E RTT4412P	4.00	4.00	12.00	16	E L21
E RTT6612P	6.00	6.00	12.00	16	E L21
E RTT8812P	8.00	8.00	12.00	14	E L21
E RTT4424P	4.00	4.00	24.00	16	E L21
E RTT6624P	6.00	6.00	24.00	16	E L21
E RTT8824P	8.00	8.00	24.00	14	E L21
E RTT4436P	4.00	4.00	36.00	16	E L21
E RTT4448P	4.00	4.00	48.00	16	E L21
E RTT4460P	4.00	4.00	60.00	16	E L21
E RTT6648P	6.00	6.00	48.00	16	E L21
E RTT8848P	8.00	8.00	48.00	14	E L21
E RTT6672P	6.00	6.00	72.00	16	E L21
E RTT8872P	8.00	8.00	72.00	14	E L21

\* Also available in galvanized steel.



# Gasketed Screw Cover Boxes



## Galvanized Commercial Enclosures

These Rittal Electromate screw cover enclosures can be used as wiring, pull, junction, or terminal boxes for indoor applications in dusty or wet environments.

### Configuration

- Continuously welded seams, finished smooth
- Cover fastened with plated steel screws
- Oil resistant gasket

### Technical Specifications

- Material:**
- *Enclosure:* 12 gauge G-90 galvanized steel
  - *Cover:* 12 gauge G-90 galvanized steel
- Finish/color:**
- *Enclosure/cover:* unpainted external welded seams; zinc-rich covering provides protection equivalent to galvanized steel

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

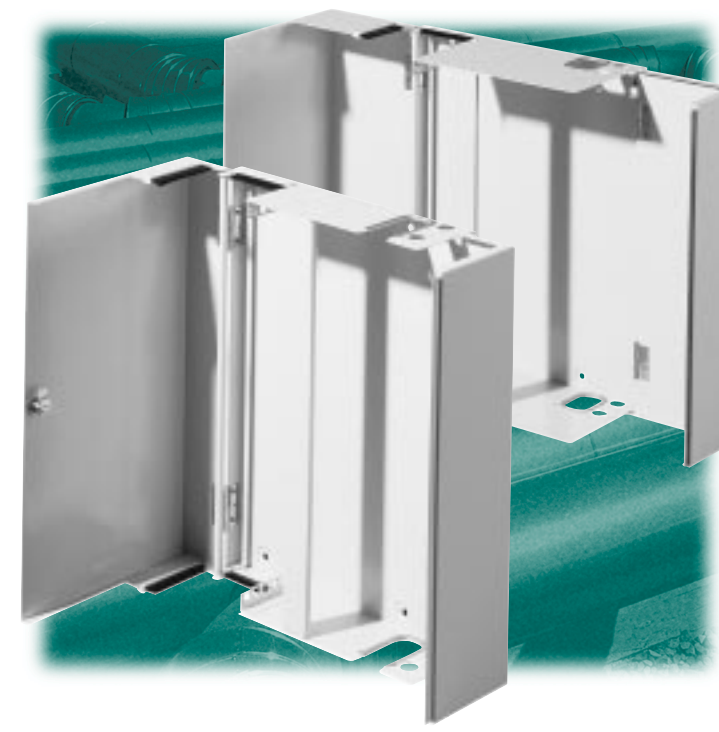
**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... COM 31

Part No.	Enclosure		
	Outside dimensions (inches)		
	H	W	D
E WTB664	6.00	6.00	4.00
E WTB884	8.00	8.00	4.00
E WTB10106	10.00	10.00	6.00
E WTB12126	12.00	12.00	6.00
E WTB16126	16.00	12.00	6.00
E WTB12128	12.00	12.00	8.00
E WTB242412	24.00	24.00	12.00

# Wallmount Distribution Boxes



## Maintain Your Network

Today's digital and analog communications requires that components are safely and efficiently maintained. Rittal's wallmount distribution boxes provide a 2 U/4 U solution for your office communications equipment — from patch panels and hubs to copper and fiber termination. Rely on Rittal to provide the utmost in packaging for your SOHO network installations.

### Configuration

- Wallmount form factor
- Keyed security lock for each door
- Top and bottom cable entry
- Separately secured inlet/outlet cable entry
- Space to comply with cable bending radius specs
- Copper or fiber cable termination
- Active or passive components supported
- Hardware supported includes patch panels, hubs, copper and fiber termination

### Technical Specifications

- Standard unit includes enclosure, 19" mounting angles, locking door, brush insert cable entry
  - Options include patch cables, connectors, PG screwed gland plates
- Material/finish:**
- *Enclosure/door:* 1.5 mm sheet steel, powder coated RAL 7035 light grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... COM 32

Part No.	U	Enclosure					
		Exact outside dimensions					
		inches			mm		
		H	W	D	H	W	D
7245000	2	20.16	16.0	4.2	504.0	400.0	106.0
7245400	4	20.16	16.0	7.8	504.0	400.0	195.0



# Small Office Mini Racks



## Protect And House

Perfect for any small office setting, Rittal's RiCase mini racks feature an on/under desk design that can be stacked or wallmounted for quick functionality and versatility. With a locking door and 1/2 19" mounting angles, these racks provide an ideal housing for networking equipment and components.

### Configuration

- Freestanding modular enclosure form factor
- Stackable design
- Depth adjustable front mounting angles
- Wallmountable
- Cable routing and management
- Hardware supported includes hubs, switches, routers, copper and termination, power strips
- Standard unit includes enclosure, 1/2 19" mounting angles, locking door, vented slides

- Options include patch cables, connectors, wallmount hardware, component shelf, swing frame, cable tray, access panels, patch panels

### Technical Specifications

- Material/finish:**
- *Enclosure:* Extruded aluminum powder coated in RAL 7035 light grey

### Protection Ratings

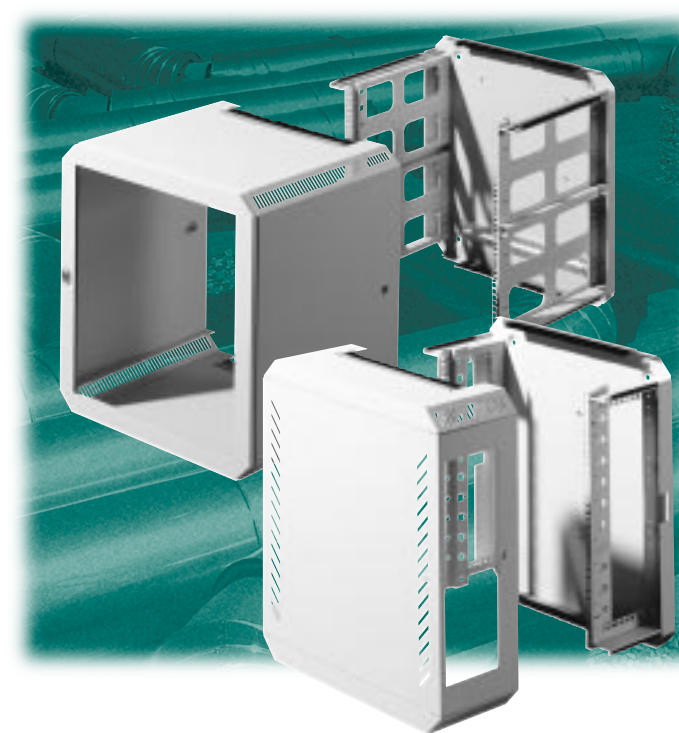
**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

Enclosure							
Part No.	U	Exact outside dimensions					
		inches			mm		
		H	W	D	H	W	D
7870100	4	10.0	13.5	11.0	255.0	342.0	280.0
7870200	8	15.4	13.5	11.0	390.0	342.0	280.0

# Small Office Cabinets



## Ease Of Mind

Organize your small office network with Rittal's line of 19" wallmount enclosures. Ideal for patch panels and cables, these wallmount boxes help with cable routing and management. And security is top-notch with the lock on each cover. Let these wallmount solutions provide the protection and security you need for your network.

### Configuration

- Wallmount form factor
- Removable cover for rear component access
- Cable routing and management
- Top/bottom cable entry
- Security lock on each side of cover
- Hardware supported includes copper and fiber termination
- Standard unit includes removable vented enclosure, 19" mounting angles, brush insert cable entry, wallmount section

- Options include patch cables, connectors, wallmount hardware, component shelf, cable tray, access panels, patch panels

### Technical Specifications

- Material/finish:**
- *Enclosure:* 2 mm sheet steel, powder coated in RAL 7035 light grey
  - *Wallmounting plate/brackets:* 2 mm sheet steel
  - *Enclosure cover:* 1 mm sheet steel
  - *Door:* sheet steel frame/safety glass

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... COM 33

Enclosure							
Part No.	U	Exact outside dimensions					
		inches			mm		
		H	W	D	H	W	D
<b>Solid Front</b>							
7502630	12 in front/3 on sides	25.0	24.0	8.0	631.0	600.0	210.0
7502660	12 in front/6 on sides	25.0	24.0	14.0	631.0	600.0	360.0
<b>Viewing Window</b>							
7502035	12	24.7	24.0	20.0	628.0	600.0	500.0
7502045	15	30.0	24.0	20.0	762.0	600.0	500.0
7502055	18	35.0	24.0	20.0	895.0	600.0	500.0



# 19" Modular Enclosures



## Perfect For Expansion

Designed to seamlessly blend into your office environment, Rittal's 19" modular enclosures feature easy access for freestanding or wallmount installations. Assembly is a snap with the all-screw assembly feature and a wide range of accessories are available to expand your installation.

### Configuration

- Wallmount/freestanding form factor
- Base/roof frame
- Vertical section
- 4 leveling feet
- Locking side panels, rear door and front glazed door with safety glass
- Front/rear 19" mounting angles
- Roof panel
- Brush covered cable entry plate for base frame rear
- Solid entry plate for base frame front
- Grounded panels
- 100 mm plinth
- Brush insert cable entry
- 4 combination rails for width
- 50 captive nuts

- Hardware supported includes small servers, hubs, switches, routers, copper and fiber termination, power strips, UPS
- Standard unit includes enclosure frame, locking side panels, locking front view door, front/rear 19" mounting angles, brush insert cable entry in base leveling feet
- Options include patch cables, connectors, wallmount hardware, slide rails, component shelf, cable tray, access panels, patch panels

### Technical Specifications

#### Material/finish:

- *Frame:* 2 mm sheet steel
- *Panels:* 1 mm sheet steel
- *Panel:* powder coated RAL 7035 light grey
- *Vertical sections:* powder coated RAL 5018 teal green

Enclosure		Exact outside dimensions					
Part No.	U	inches			mm		
		H	W	D	H	W	D
7528400	24	47.2	32.0	32.0	1200.0	800.0	800.0

### Protection Ratings

NEMA Type  1  4  4X  12  13

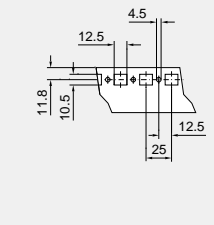
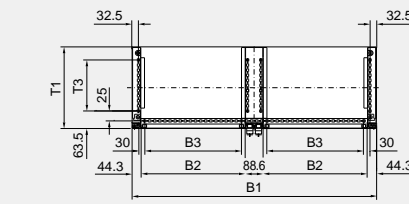
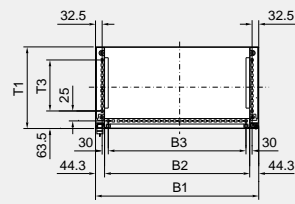
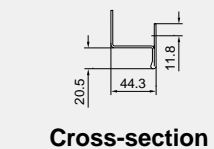
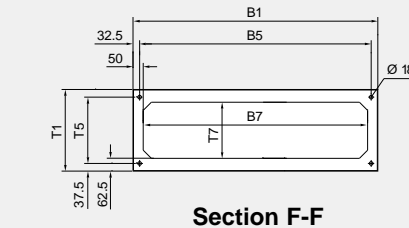
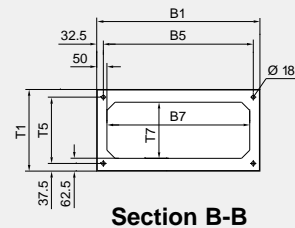
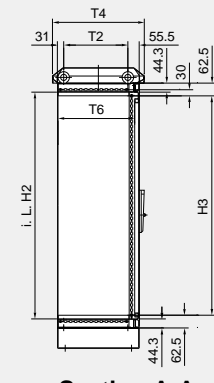
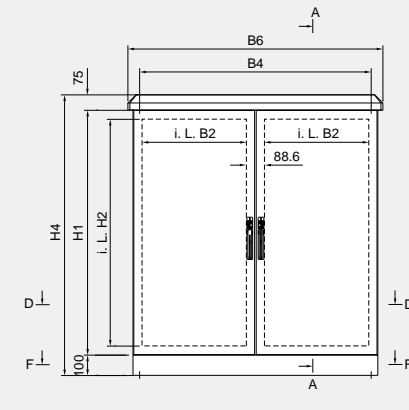
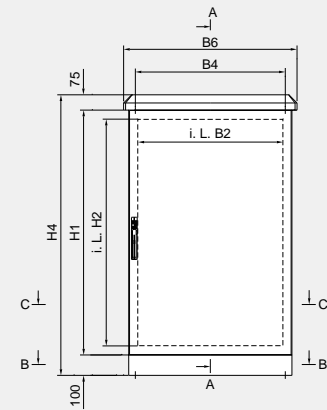
### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV

### Technical Drawings

Page ..... COM 33

## Technical Specifications Basic Aluminum Outdoor Enclosures

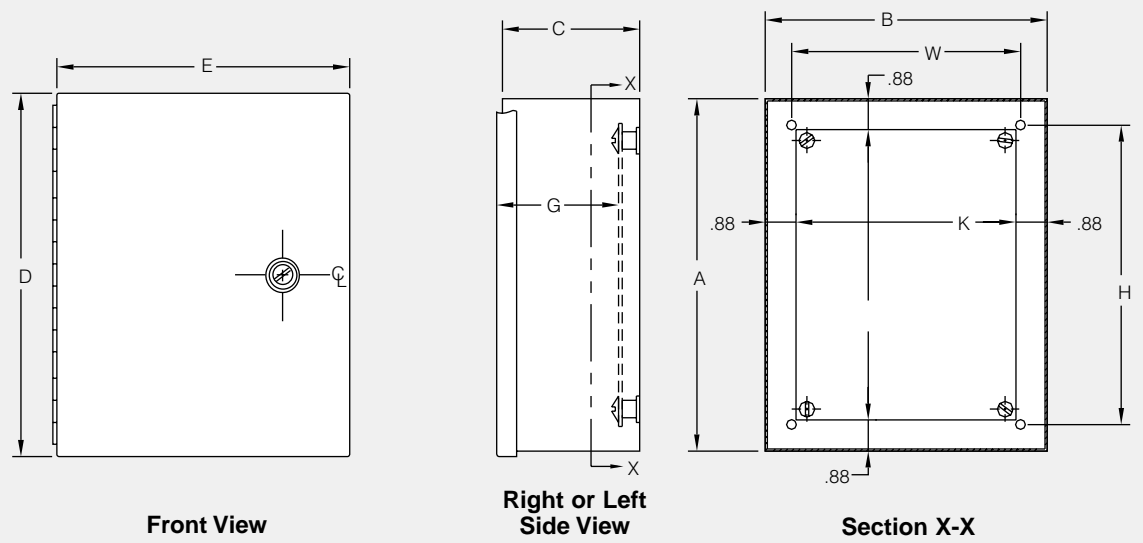


Enclosure						
Height in mm	800	800	800	1200	1200	1200
Width in mm	600	800	1200	600	800	1200
Depth in mm	400	400	400	400	400	400
Part No.	9783040	9783010	9784010	9783050	9783020	9784020
Door(s)	1	1	2	1	1	2
B1	600	800	1200	600	800	1200
B2	511.4	711.4	511.4	511.4	711.4	511.4
B3	475	675	475	475	675	475
B4	540	740	1140	540	740	1140
B5	535	735	1135	535	735	1135
B6	650	850	1250	650	850	1250
B7	500	700	1100	500	700	1100
H1	800	800	800	1200	1200	1200
H2	711.4	711.4	711.4	1111.4	1111.4	1111.4
H3	675	675	675	1075	1075	1075
H4	975	975	975	1375	1395	1375
T1	400	400	400	400	400	400
T2	314.5	314.5	314.5	314.5	314.5	314.5
T3	250	250	250	250	250	250
T4	450	450	450	450	450	450
T5	325	325	325	325	325	325
T6	375	375	375	375	375	375
T7	275	275	275	275	275	275

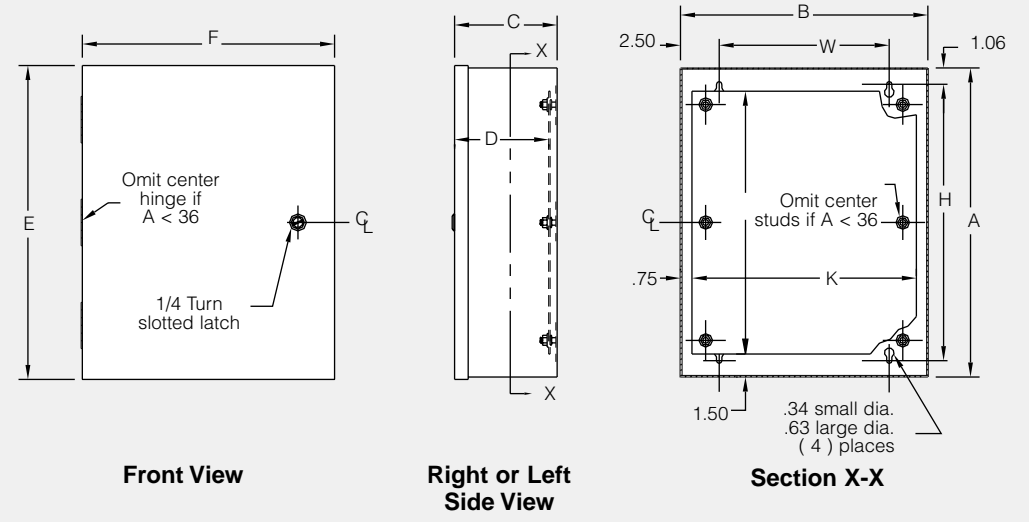




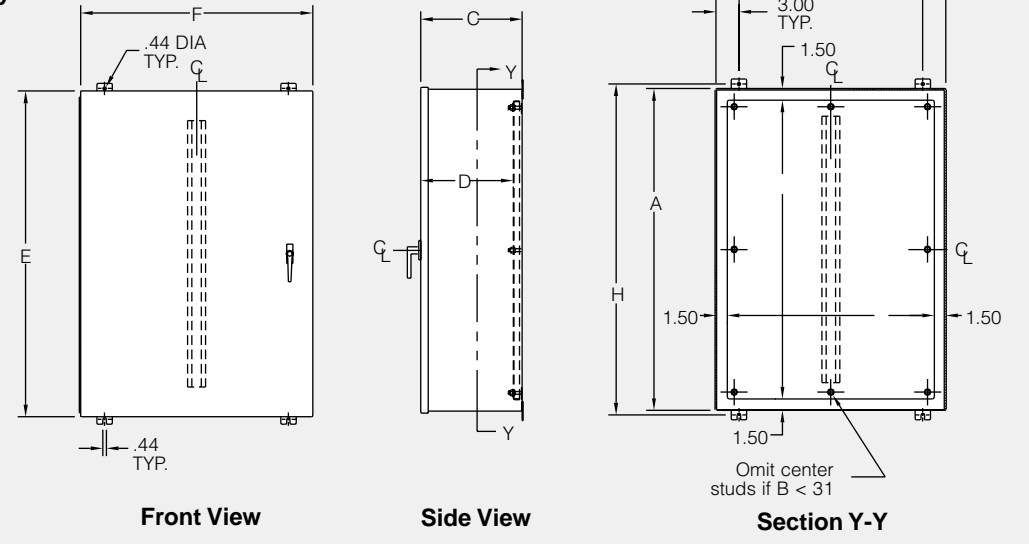
**Technical Specifications**  
Small Type 1 Wallmount Enclosures



**Technical Specifications**  
Large Type 1 Wallmount Enclosures



For E 48N3609 Only

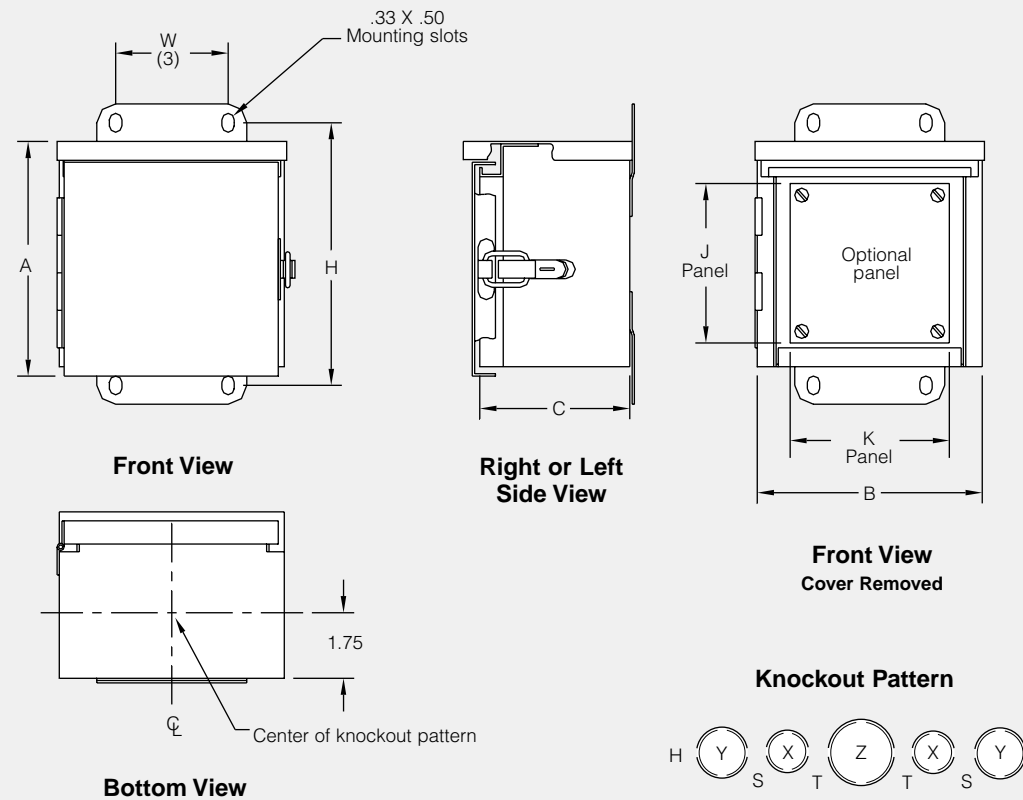


Part No.	Enclosure			Mounting Panel				Part No.	Panel size		Usable depth
	Outside dimensions (inches)			Mounting centers		Door size			J	K	
	Height A	Width B	Depth C	H	W	D	E				
E 8N64	8.00	6.00	4.00	5.00	5.00	8.31	6.31	E 8N6P	6.25	4.25	3.44
E 10N84	10.00	8.00	4.00	7.00	7.00	10.31	8.31	E 10N6P	8.25	6.25	3.44
E 12N104	12.00	10.00	4.00	9.00	9.00	12.31	10.31	E 12N10P	10.25	8.25	3.44
E 12N124	12.00	12.00	4.00	9.00	11.00	12.31	12.31	E 12N12P	10.25	10.25	3.44
E 8N66	8.00	6.00	6.00	5.00	5.00	8.31	6.31	E 8N6P	6.25	4.25	5.44
E 12N106	12.00	10.00	6.00	9.00	9.00	12.31	10.31	E 12N10P	10.25	8.25	5.44
E 12N126	12.00	12.00	6.00	9.00	11.00	12.31	12.31	E 12N12P	10.25	10.25	5.44
E 14N126	14.00	12.00	6.00	11.00	11.00	14.31	12.31	E 14N12P	12.25	10.25	5.44
E 16N126	16.00	12.00	6.00	13.00	11.00	16.31	12.31	E 16N12P	14.25	10.25	5.44
E 20N126	20.00	12.00	6.00	17.00	11.00	20.31	12.31	E 20N12P	18.25	10.25	5.44
E 24N126	24.00	12.00	6.00	21.00	11.00	24.31	12.31	E 24N12P	22.25	10.25	5.44
E 14N128	14.00	12.00	8.00	11.00	11.00	14.31	12.31	E 14N12P	12.25	10.25	7.44

Part No.	Enclosure			Mounting Panel				Part No.	Panel size		Usable depth
	Outside dimensions (inches)			Mounting centers		Door size			J	K	
	Height A	Width B	Depth C	H	W	E	F				
E 16N12A	16.00	12.00	6.63	13.88	7.00	16.38	12.38	E 16N12P2	13.00	10.50	6.00
E 16N16A	16.00	16.00	6.63	13.88	11.00	16.38	16.38	E 16N16P2	13.00	14.50	6.00
E 20N16A	20.00	16.00	6.63	17.88	11.00	20.38	16.38	E 20N16P	17.00	14.50	6.00
E 20N20A	20.00	20.00	6.63	17.88	15.00	20.38	20.38	E 20N20P	17.00	18.50	6.00
E 24N16A	24.00	16.00	6.63	21.88	11.00	24.38	16.38	E 24N16P	21.00	14.50	6.00
E 24N20A	24.00	20.00	6.63	21.88	15.00	24.38	20.38	E 24N20P	21.00	18.50	6.00
E 24N24A	24.00	24.00	6.63	21.88	19.00	24.38	24.38	E 24N24P	21.00	22.50	6.00
E 30N20A	30.00	20.00	6.63	27.88	15.00	30.38	20.38	E 30N20P	27.00	18.50	6.00
E 30N24A	30.00	24.00	6.63	27.88	19.00	30.38	24.38	E 30N24P	27.00	22.50	6.00
E 36N24A	36.00	24.00	6.63	33.88	19.00	36.38	24.38	E 36N24P	33.00	22.50	6.00
E 36N30A	36.00	30.00	6.63	33.88	25.00	36.38	30.38	E 36N30P	33.00	28.50	6.00
E 20N16B	20.00	16.00	8.63	17.88	11.00	20.38	16.38	E 20N16P	17.00	14.50	8.00
E 20N20B	20.00	20.00	8.63	17.88	15.00	20.38	20.38	E 20N20P	17.00	18.50	8.00
E 24N20B	24.00	20.00	8.63	21.88	15.00	24.38	20.38	E 24N20P	21.00	18.50	8.00
E 24N24B	24.00	24.00	8.63	21.88	19.00	24.38	24.38	E 24N24P	21.00	22.50	8.00
E 30N24B	30.00	24.00	8.63	27.88	19.00	30.38	24.38	E 30N24P	27.00	22.50	8.00
E 30N30B	30.00	30.00	8.63	27.88	25.00	30.38	30.38	E 30N30P	27.00	28.50	8.00
E 36N24B	36.00	24.00	8.63	33.88	19.00	36.38	24.38	E 36N24P	33.00	22.50	8.00
E 36N30B	36.00	30.00	8.63	33.88	25.00	36.38	30.38	E 36N30P	33.00	28.50	8.00
E 48N3609	48.00	36.00	9.25	49.25	30.00	48.50	36.38	E 48P36	45.00	33.00	7.50
E 30N24C	30.00	24.00	10.63	27.88	19.00	30.38	24.38	E 30N24P	27.00	22.50	10.00



**Technical Specifications**  
Small Hinge Cover Boxes



**Knockout (Conduit Size)**

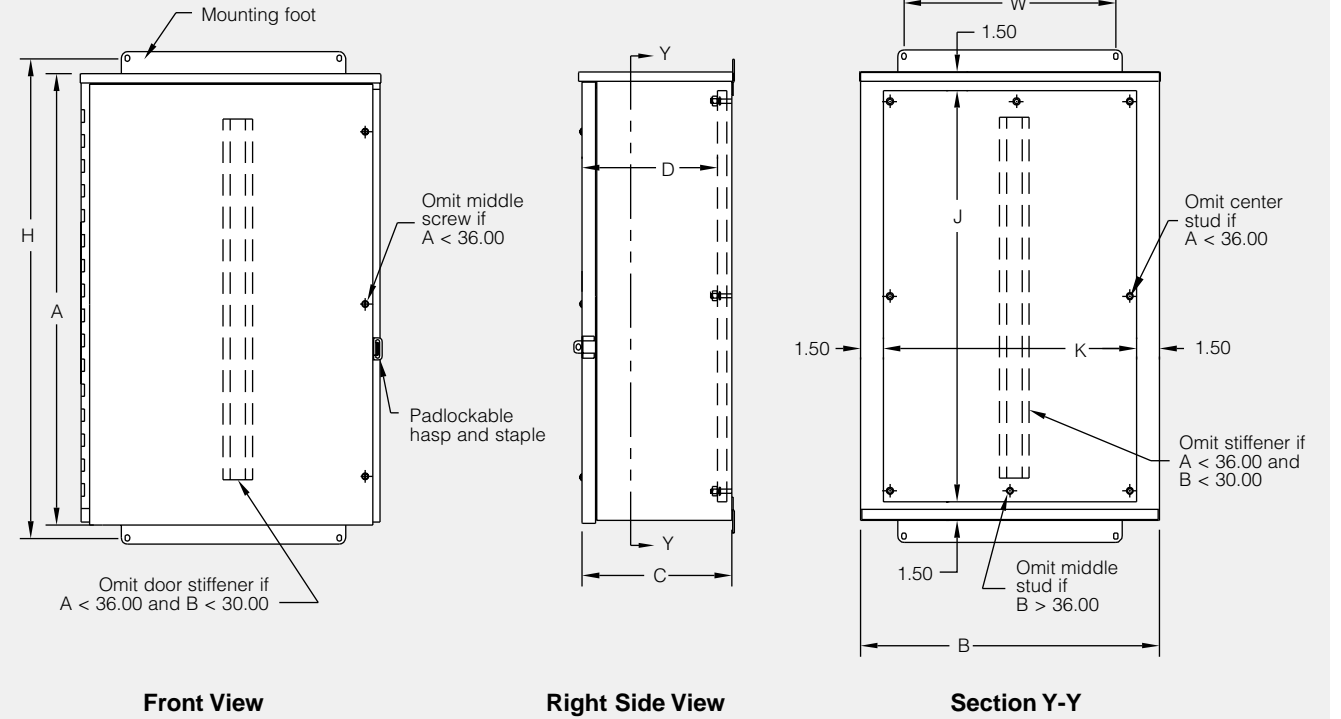
X: 1/2 & 3/4  
Y: 3/4 & 1  
Z: 1 & 1-1/4

**Knockout Center To Center Dim.**

S: 1.750  
T: 1.937

Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Mounting centers		Knockout pattern	Part No.	Panel size		Usable depth
	Height A	Width B	Depth C	H	W			J	K	
E 6R64HCR	6.00	6.00	4.00	7.00	3.00	N	E 6N6P	4.25	4.25	3.41
E 8R64HCR	8.00	6.00	4.00	9.00	3.00	N	E 8N6P	6.25	4.25	3.41
E 8R86HCR	8.00	8.00	6.00	9.00	3.00	P	E 8N8P	6.25	6.25	5.41
E 10R86HCR	10.00	8.00	6.00	11.00	3.00	P	E 10N8P	8.25	6.25	5.41
E 12R106HCR	12.00	10.00	6.00	13.00	3.00	P	E 12N10P	10.25	8.25	5.41
E 12R126HCR	12.00	12.00	6.00	13.00	3.00	H	E 12N12P	10.25	10.25	5.41

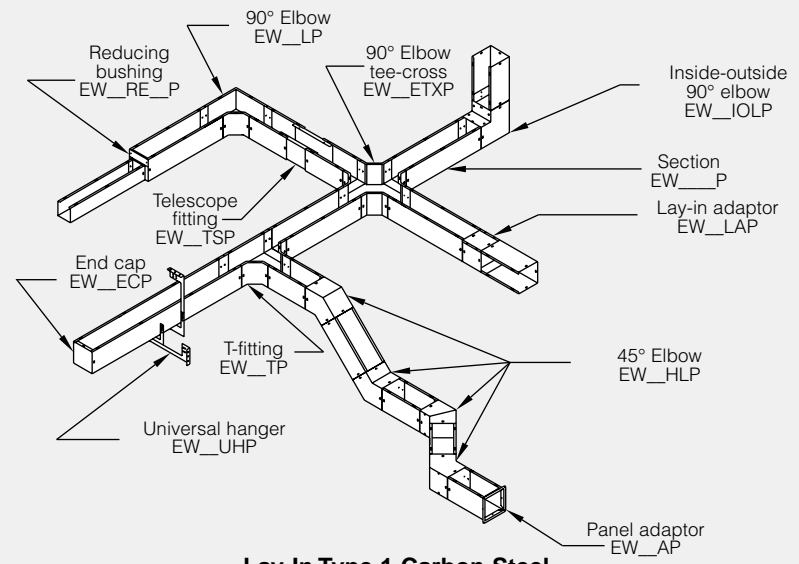
**Technical Specifications**  
Large Hinge Cover Boxes



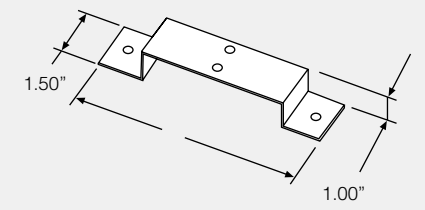
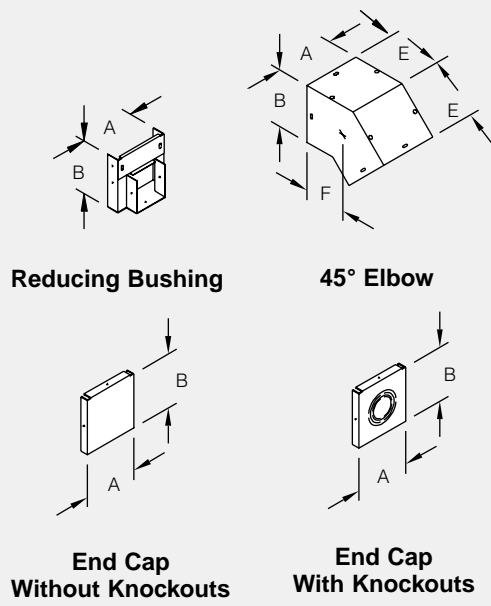
Enclosure							Mounting Panel			
Part No.	Outside dimensions (inches)			Mounting centers		Door and body stiffener	Part No.	Panel size		Usable depth
	Height A	Width B	Depth C	H	W			J	K	
E 16R166HCR	16.00	16.00	6.00	17.25	9.00	NO	E 16P16	13.00	13.00	4.81
E 20R166HCR	20.00	16.00	6.00	21.25	9.00	NO	E 20P16	17.00	13.00	4.81
E 20R208HCR	20.00	20.00	8.00	21.25	13.00	NO	E 20P20	17.00	17.00	6.81
E 24R208HCR	24.00	20.00	8.00	25.25	13.00	NO	E 24P20	21.00	17.00	6.81
E 24R248HCR	24.00	24.00	8.00	25.25	17.00	NO	E 24P24	21.00	21.00	6.81
E 30R248HCR	30.00	24.00	8.00	31.25	17.00	NO	E 30P24	27.00	21.00	6.81
E 30R3012HCR	30.00	30.00	12.00	31.25	23.00	NO	E 30P30	27.00	27.00	10.81
E 36R2412HCR	36.00	24.00	12.00	37.25	17.00	NO	E 36P24	33.00	21.00	10.81
E 36R3012HCR	36.00	30.00	12.00	37.25	23.00	YES	E 36P30	33.00	27.00	10.81
E 36R3612HCR	36.00	36.00	12.00	37.25	29.00	YES	E 36P36	33.00	33.00	10.81
E 48R3612HCR	48.00	36.00	12.00	49.25	29.00	YES	E 48P36	45.00	33.00	10.81

**Technical Specifications**

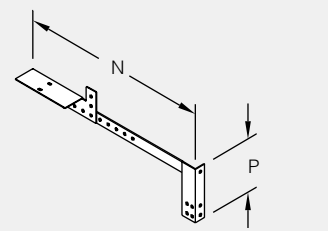
**Lay-In Type 1 Carbon Steel Wireway**



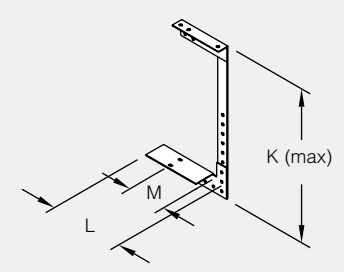
**Lay-In Type 1 Carbon Steel Wireway**



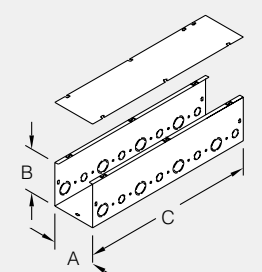
**Support Hanger**



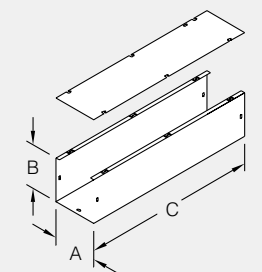
**Universal Hanger**



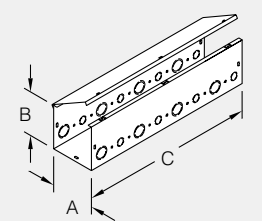
**Use As A Drop Hanger**



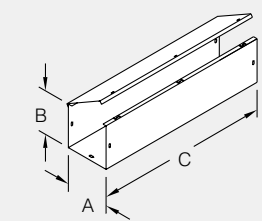
**Straight Section Painted With Knockouts**



**Straight Section Painted Without Knockouts**



**Hinge Cover Wireway Straight Section With Knockouts**



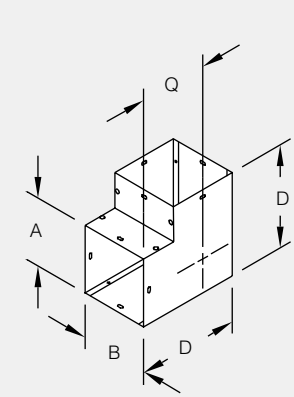
**Hinge Cover Wireway Straight Section Without Knockouts**

**Wireway**

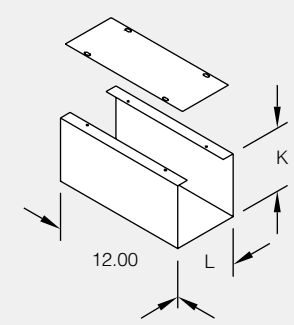
A x B	C	C	C	C	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	
<b>2.50 x 2.50</b>	12	24	36	48	60	120	4.50	2.75	2.25	2.25	7.91	4.62	8.50	4.50	3.38	7.25	3.75	3.25	5.50	6.88	11.12	5.50	6.00
<b>4.00 x 4.00</b>	12	24	36	48	60	120	6.00	3.38	2.50	3.00	9.41	6.12	10.50	6.00	4.12	9.25	4.50	4.00	6.25	8.12	12.38	6.19	6.00
<b>6.00 x 6.00</b>	12	24	36	48	60	120	8.00	4.25	3.00	4.00	11.34	8.12	15.00	7.12	5.12	13.75	5.50	5.00	7.25	10.12	14.38	7.19	6.00

**Technical Specifications**

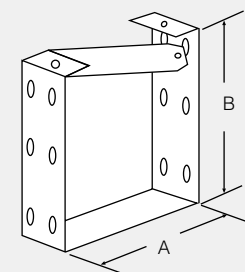
**Lay-In Type 1 Carbon Steel Wireway**



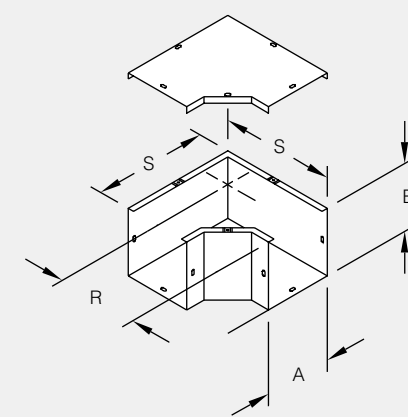
**Inside-Outside 90° Elbow**



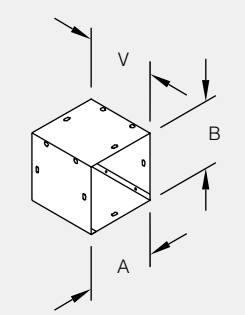
**Telescoping Fitting**



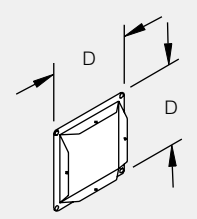
**U-Connector**



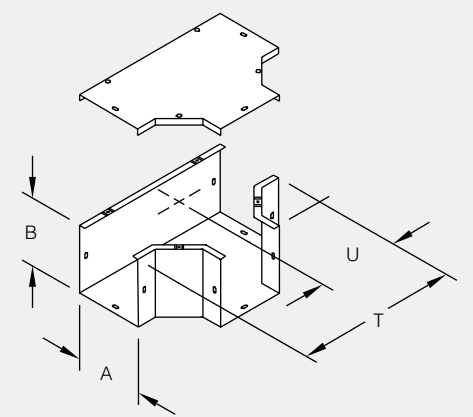
**90° Elbow**



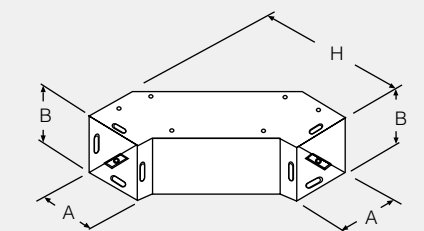
**90° Transposition Adaptor**



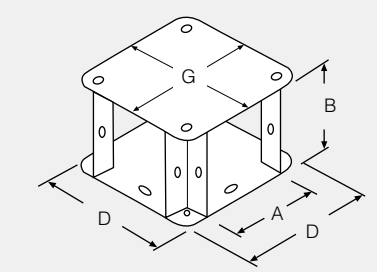
**Panel Adaptor**



**Tee Pull Box**

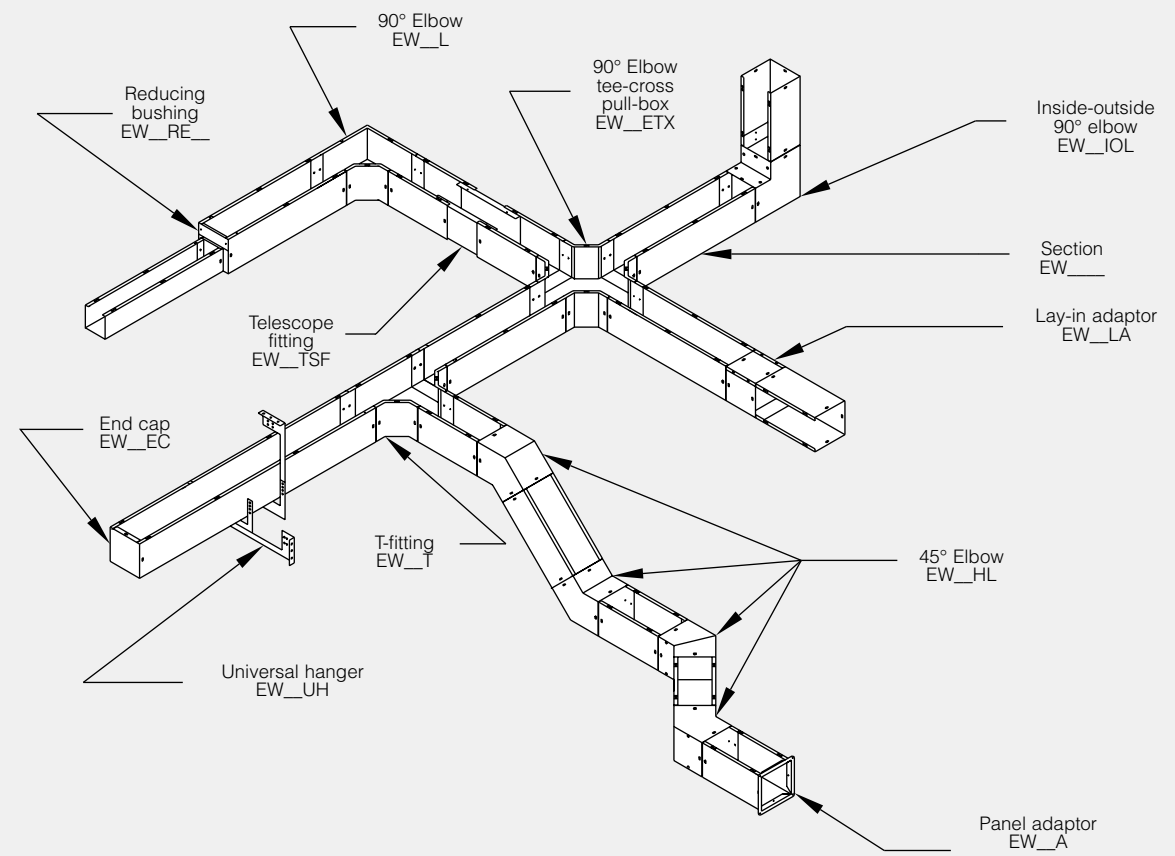


**90° Sweep Elbow**

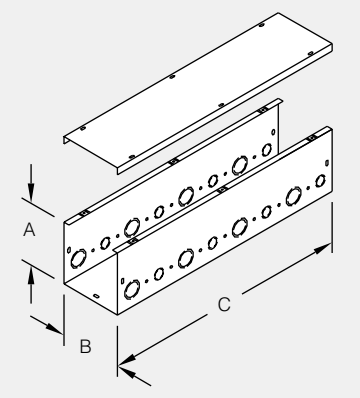


**90° Elbow-Tee-Cross**

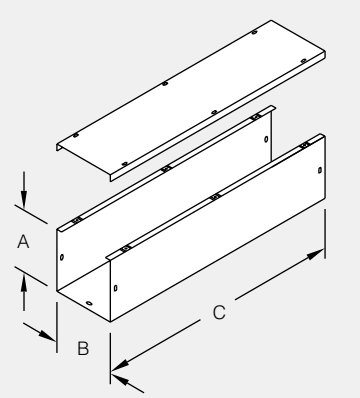
**Technical Specifications**  
Lay-In Type 1 Galvanized Steel Wireway



Lay-In Type 1 Galvanized Steel Wireway



Straight Section Galvanized With Knockouts

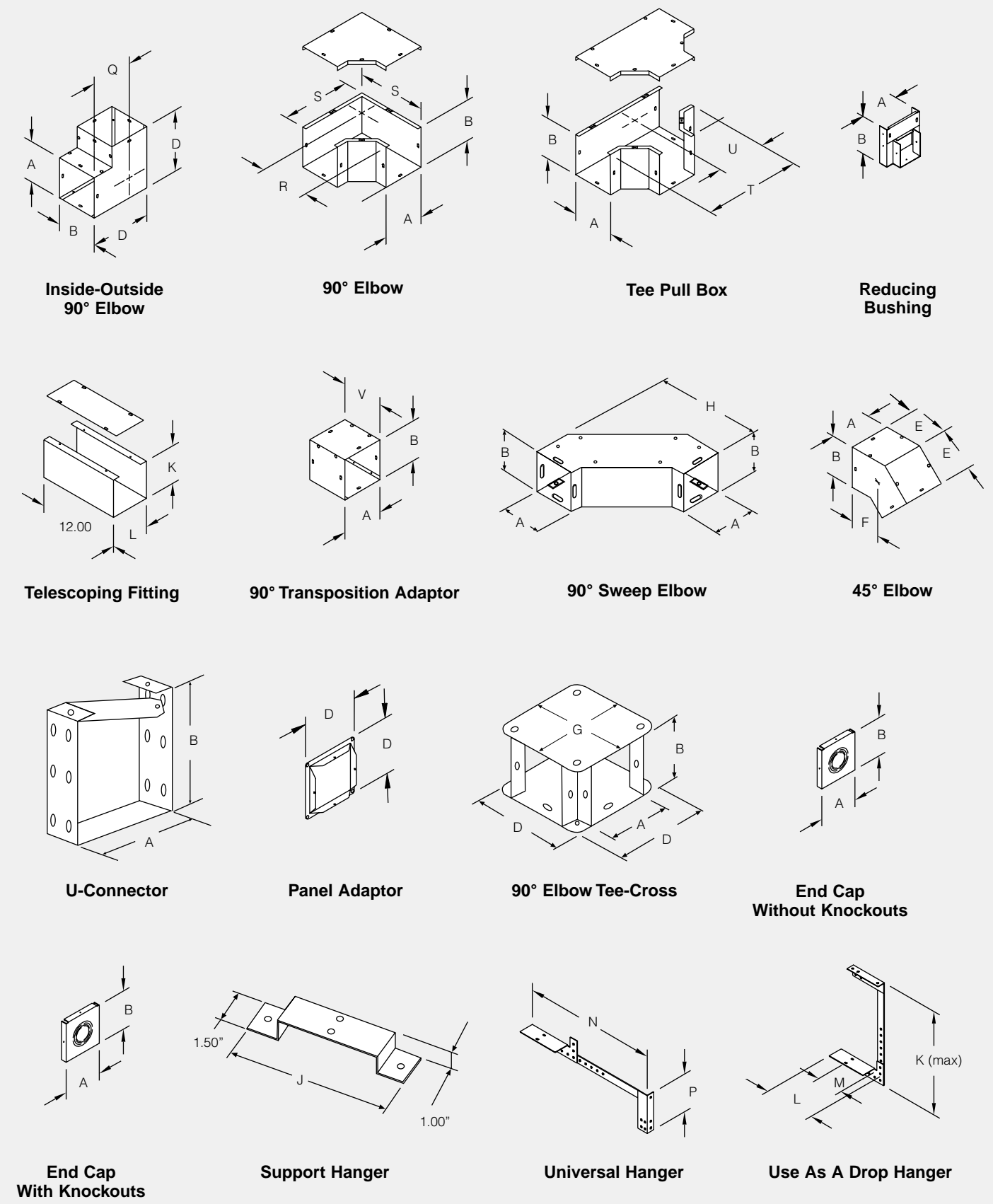


Straight Section Galvanized Without Knockouts

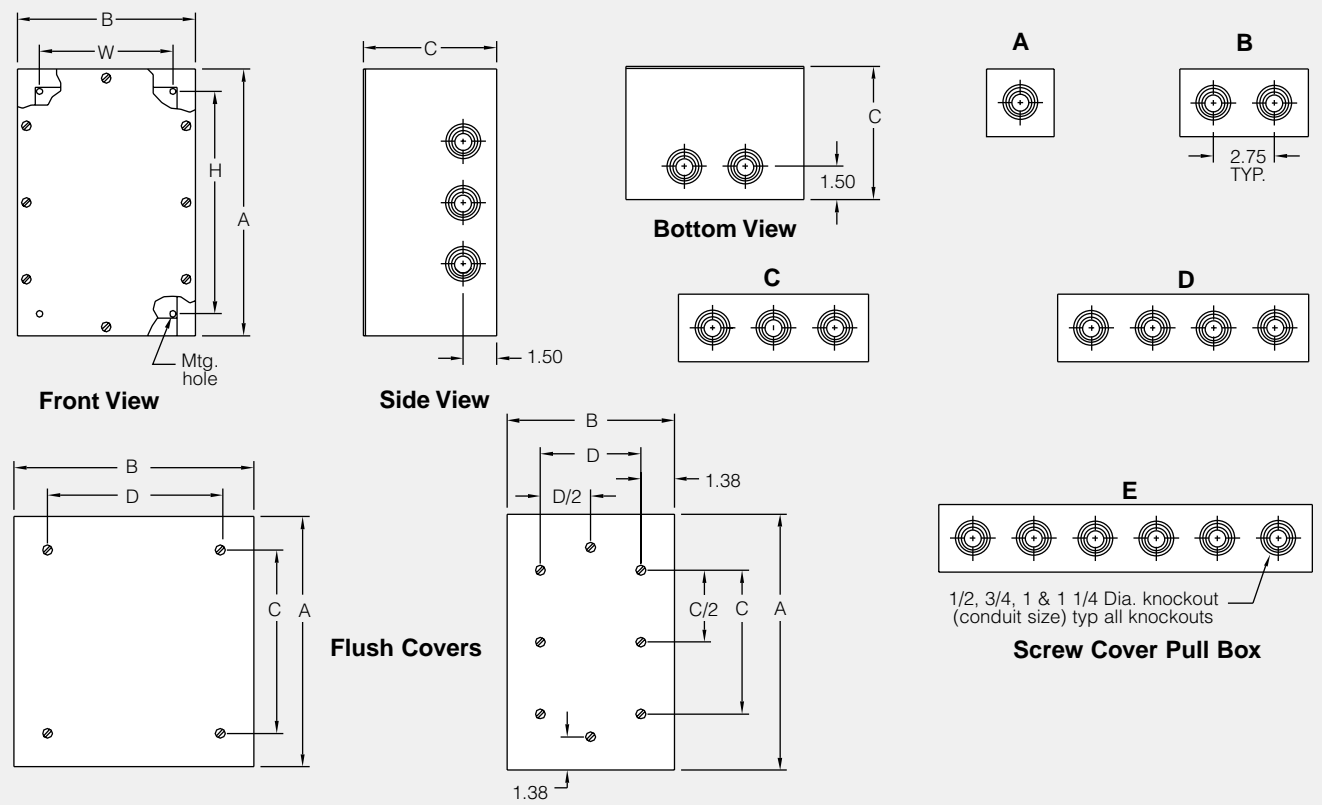
		Wireway																					
A x B*	C	C	C	C	C	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V
2.50 x 2.50	12	24	36	48	60	120	4.50	2.75	2.25	2.25	7.91	4.62	8.50	4.50	3.38	7.25	3.75	3.25	5.50	6.88	11.12	5.50	6.00
4.00 x 4.00	12	24	36	48	60	120	6.00	3.38	2.50	3.00	9.41	6.12	10.50	6.00	4.12	9.25	4.50	4.00	6.25	8.12	12.38	6.19	6.00
6.00 x 6.00	12	24	36	48	60	120	8.00	4.25	3.00	4.00	11.34	8.12	15.00	7.12	5.12	13.75	5.50	5.00	7.25	10.12	14.38	7.19	6.00

\* Inside dimensions

**Technical Specifications**  
Lay-In Type 1 Galvanized Steel Wireway



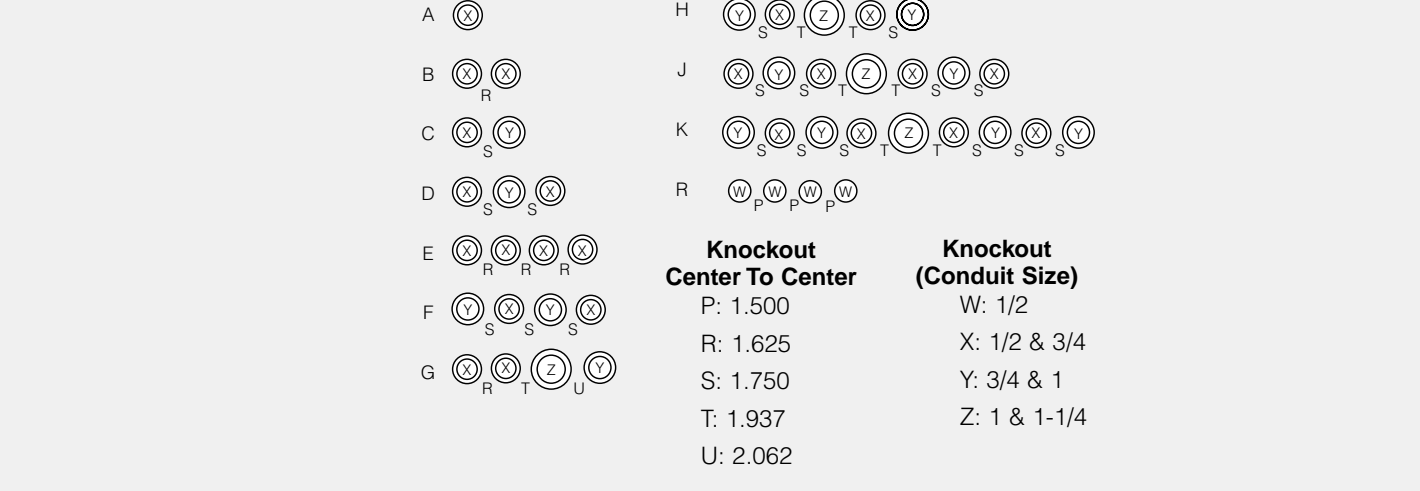
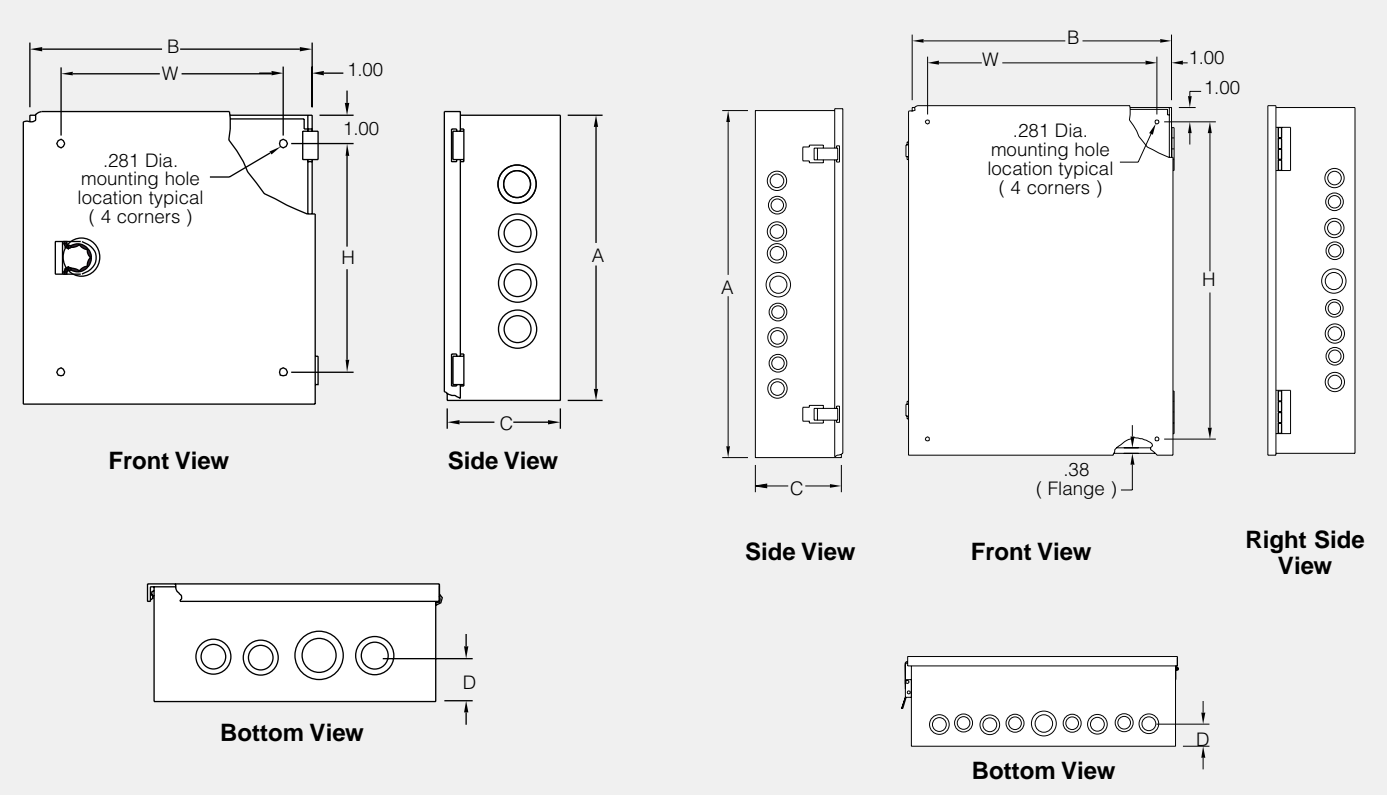
**Technical Specifications**  
Screw Cover Pull Boxes



Enclosure											
Part No. With Knockouts		Part No. Without Knockouts		Outside dimensions (inches)			Mounting centers		Number of cover screws	Knockout pattern left/right side	Knockout pattern top/bottom
Painted	Galvanized	Painted	Galvanized	A	B	C	H	W			
E SCB444PK	-	-	-	4.00	4.00	4.00	2.50	2.50	4	A	A
E SCB664PK	E SCB664K	E SCB664P	E SCB664	6.00	6.00	4.00	4.50	4.50	4	B	B
E SCB864PK	E SCB864K	E SCB864P	E SCB864	8.00	6.00	4.00	6.50	4.50	4	B	B
E SCB884PK	E SCB884K	E SCB884P	E SCB884	8.00	8.00	4.00	6.50	6.50	4	B	B
E SCB10104PK	E SCB10104K	E SCB10104P	E SCB10104	10.00	10.00	4.00	8.50	8.50	4	C	C
E SCB12104PK	E SCB12104K	E SCB12104P	E SCB12104	12.00	10.00	4.00	10.50	8.50	4	C	C
E SCB12124PK	E SCB12124K	E SCB12124P	E SCB12124	12.00	12.00	4.00	10.50	10.50	4	C	C
E SCB15124PK	-	-	E SCB15124	15.00	12.00	4.00	13.50	10.50	4	C	C
E SCB18124PK	-	-	-	18.00	12.00	4.00	16.50	10.50	4	E	C
E SCB18126PK	-	-	-	18.00	12.00	6.00	16.50	10.50	4	E	C
E SCB666PK	E SCB666K	E SCB666P	E SCB666	6.00	6.00	6.00	4.50	4.50	4	B	B
E SCB886PK	E SCB886K	E SCB886P	E SCB886	8.00	8.00	6.00	6.50	6.50	4	B	B
E SCB10106PK	E SCB10106K	E SCB10106P	E SCB10106	10.00	10.00	6.00	8.50	8.50	4	C	C
E SCB12126PK	E SCB12126K	E SCB12126P	E SCB12126	12.00	12.00	6.00	10.50	10.50	4	C	C
E SCB18186PK	E SCB18186K	E SCB18186P	E SCB18186	18.00	18.00	6.00	16.50	16.50	4	E	E
E SCB24246PK	E SCB24246K	E SCB24246P	E SCB24246	24.00	24.00	6.00	22.50	22.50	4	E	E
-	-	E SCB24248P	E SCB24248	24.00	24.00	8.00	21.12	21.38	4	-	-

Painted Flush Covers Only							
Part No.	Enclosure size		Cover size		Cover screw centers		Material gauge
	Height	Width	A	B	C	D	
E FC44P	4.00	4.00	6.00	6.00	-	3.25	14
E FC66P	6.00	6.00	8.00	8.00	-	5.25	14
E FC86P	8.00	6.00	10.00	8.00	4.38	5.25	14
E FC88P	8.00	8.00	10.00	10.00	4.38	7.25	14
E FC1010P	10.00	10.00	12.00	12.00	6.38	9.25	14
E FC1210P	12.00	10.00	14.00	12.00	8.38	9.25	14
E FC1212P	12.00	12.00	14.00	14.00	8.38	11.25	14
E FC1512P	15.00	12.00	17.00	14.00	11.38	11.25	14
E FC1812P	18.00	12.00	20.00	14.00	14.38	11.25	14
E FC1818P	18.00	18.00	20.00	20.00	14.38	17.25	14
E FC2424P	24.00	24.00	26.00	26.00	20.38	23.25	14

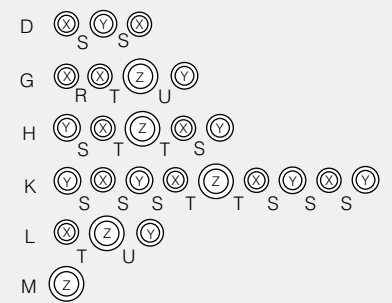
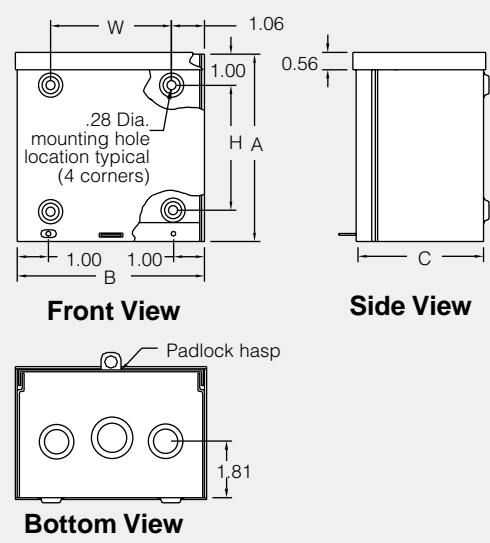
**Technical Specifications**  
Hinge Cover Pull Boxes



Enclosure									
Part No.	Outside dimensions (inches)			Mounting centers		Knockout pattern left/right side	Knockout pattern top/bottom	Knockout pattern location D	
	Height A	Width B	Depth C	H	W				
E HCB553PK	4.50	5.00	3.06	2.50	3.00	A	C	1.25	
E HCB664PK	6.00	6.00	4.06	4.00	4.00	C	D	1.50	
E HCB864PK	8.00	6.00	4.06	6.00	4.00	D	D	1.50	
E HCB884PK	8.00	8.00	4.06	6.00	6.00	D	F	1.50	
E HCB10104PK	10.00	10.00	4.06	8.00	8.00	F	G	1.50	
E HCB1264PK	12.00	6.00	4.06	10.00	4.00	H	D	1.50	
E HCB1284PK	12.00	8.00	4.06	10.00	6.00	H	F	1.50	
E HCB12104PK	12.00	10.00	4.06	10.00	8.00	H	G	1.50	
E HCB12124PK	12.00	12.00	4.06	10.00	10.00	H	H	1.50	
E HCB18154PK	18.00	15.00	4.06	16.00	13.00	K	J	1.50	
E HCB12106PK	12.00	10.00	6.06	10.00	8.00	H	G	1.50	
E HCB12126PK	12.00	12.00	6.06	10.00	10.00	H	H	1.50	
E HCB18186PK	18.00	18.00	6.06	16.00	16.00	K	K	1.50	
E HCB24186PK	24.00	18.00	6.06	22.00	16.00	K	K	1.50	



**Technical Specifications**  
Raintight Screw Cover Enclosures

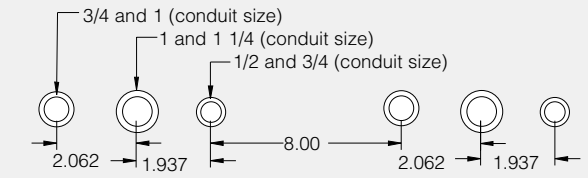
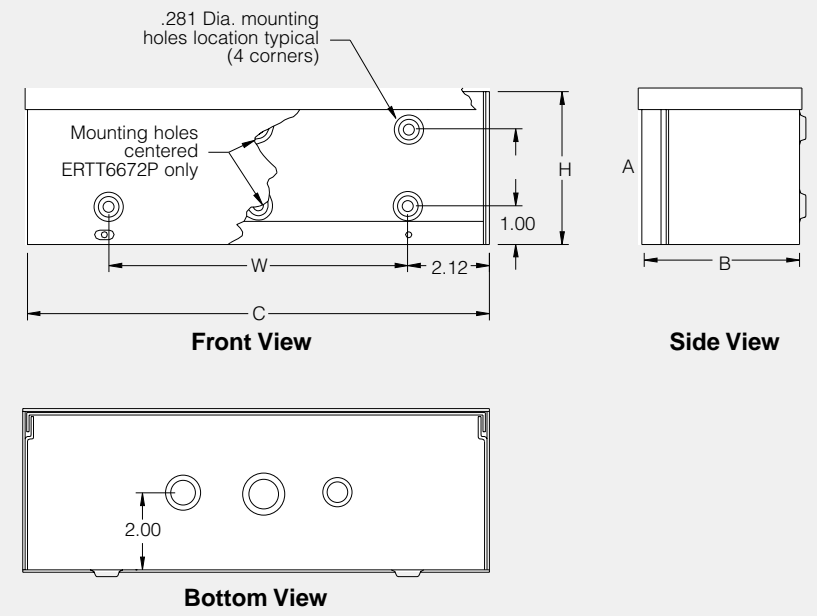


**Knockout Center To Center**  
R: 1.625  
S: 1.750  
T: 1.937  
U: 2.062

**Knockout (Conduit Size)**  
X: 1/2 & 3/4  
Y: 3/4 & 1  
Z: 1 & 1-1/4

Enclosure								
Part No.		Outside dimensions (inches)			Mounting centers		Knockout Pattern Painted	Knockout Pattern Galvanized
		Height A	Width B	Depth C	H	W		
Painted	Galvanized							
E RTB664P	E RTB664	6.00	6.00	4.00	4.00	3.88	D	D
E RTB884P	E RTB884	8.00	8.00	4.00	6.00	5.88	D	L
E RTB10104P	E RTB10104	10.00	10.00	4.00	10.00	5.88	G	L
E RTB12124P	E RTB12124	12.00	12.00	4.00	10.00	9.88	H	H
E RTB886P	-	8.00	8.00	6.00	6.00	5.88	L	L
E RTB10106P	-	10.00	10.00	6.00	8.00	7.88	G	G
E RTB12126P	E RTB12126	12.00	12.00	6.00	10.00	9.88	H	H
E RTB18126P	E RTB18126	18.00	12.00	6.00	16.00	15.88	H	H
E RTB18186P	E RTB18186	18.00	18.00	6.00	16.00	15.88	K	K
E RTB18188P	-	18.00	18.00	8.00	16.00	15.88	-	-
E RTB24248P	-	24.00	24.00	8.00	22.00	21.88	-	-

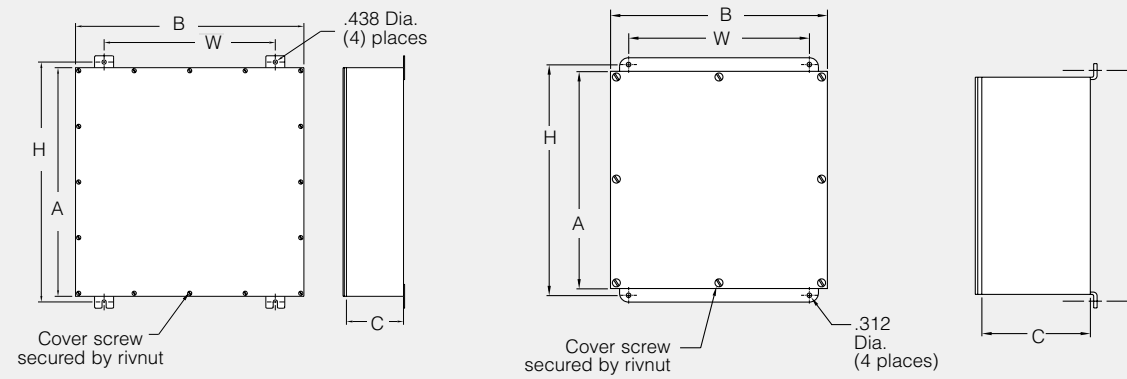
**Technical Specifications**  
Raintight Wiring Trough



Wiring Trough						
Part No.	Outside dimensions (inches)			Mounting centers		Number of knockouts in bottom
	Height A	Width B	Length C	H	W	
E RTT4412P	4.00	4.00	12.00	2.00	2.00	3
E RTT6612P	6.00	6.00	12.00	4.00	4.00	3
E RTT8812P	8.00	8.00	12.00	6.00	6.00	-
E RTT4424P	4.00	4.00	24.00	2.00	2.00	6
E RTT6624P	6.00	6.00	24.00	4.00	4.00	6
E RTT8824P	8.00	8.00	24.00	6.00	6.00	-
E RTT4436P	4.00	4.00	36.00	2.00	2.00	9
E RTT4448P	4.00	4.00	48.00	2.00	2.00	12
E RTT4460P	4.00	4.00	60.00	2.00	2.00	15
E RTT6648P	6.00	6.00	48.00	4.00	4.00	12
E RTT8848P	8.00	8.00	48.00	6.00	6.00	-
E RTT6672P	6.00	6.00	72.00	4.00	4.00	18
E RTT8872P	8.00	8.00	72.00	6.00	6.00	-

### Technical Specifications

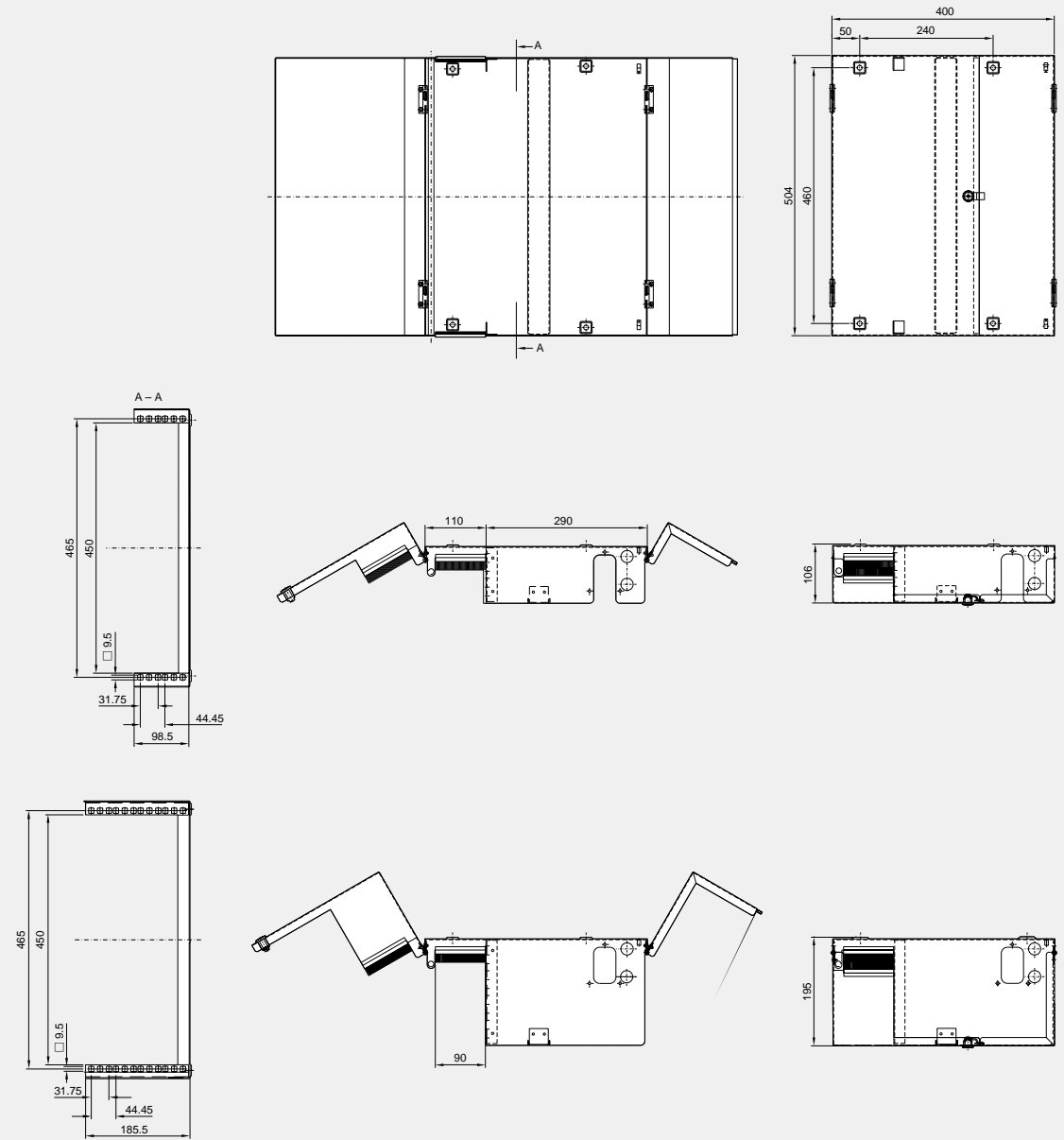
#### Gasketed Screw Cover Boxes



Part No.	Enclosure			Mounting centers	
	Outside dimensions (inches)				
	Height A	Width B	Depth C	H	W
E WTB664	6.00	6.00	4.00	6.75	4.00
E WTB884	8.00	8.00	4.00	8.75	6.00
E WTB10106	10.00	10.00	6.00	10.75	8.00
E WTB12126	12.00	12.00	6.00	12.75	10.00
E WTB16126	16.00	12.00	6.00	16.75	10.00
E WTB12128	12.00	12.00	8.00	12.75	10.00
E WTB242412	24.00	24.00	12.00	25.25	18.00

### Technical Specifications

#### Wallmount Distribution Boxes



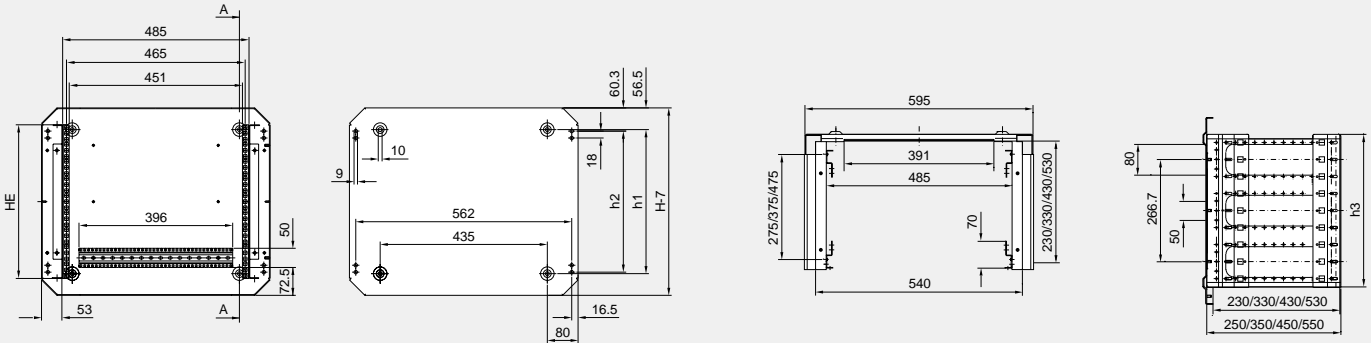
Part No.	U	Enclosure					
		Exact outside dimensions					
		inches			mm		
H	W	D	H	W	D		
7245000	2	20.16	16.0	4.2	504.0	400.0	106.0
7245400	4	20.16	16.0	7.8	504.0	400.0	195.0



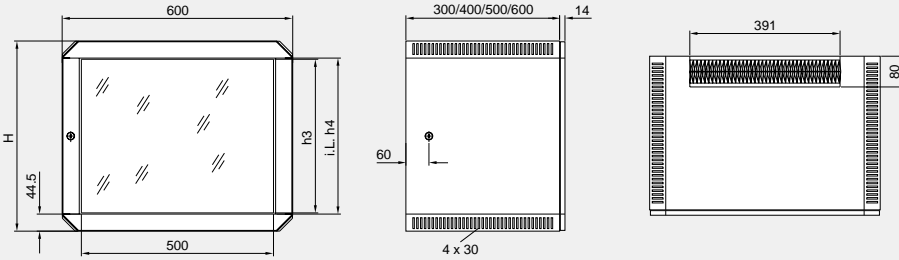
# Technical Specifications

## Small Office Cabinets

### Solid Front

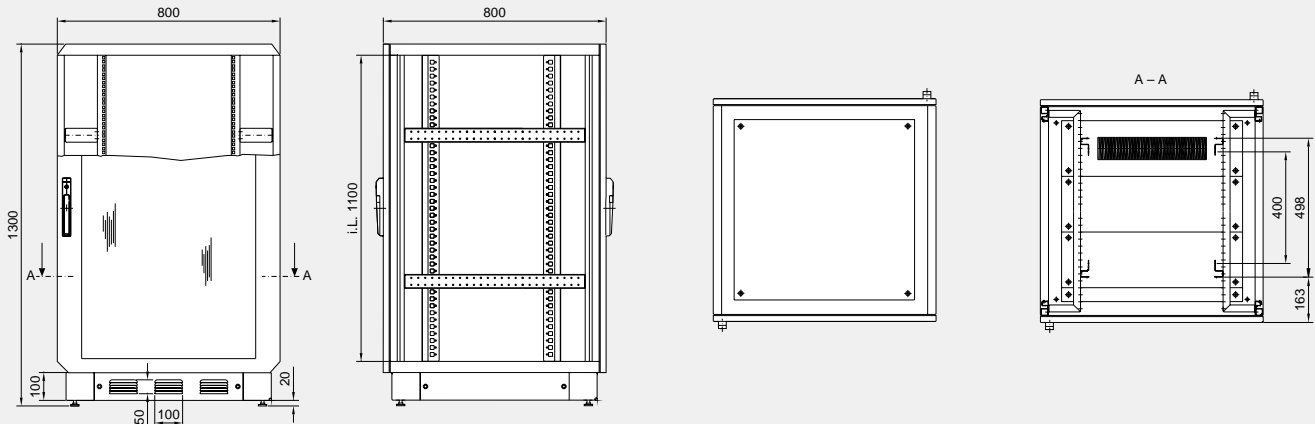


### Viewing Window



Enclosure											
Part No.	U	Exact outside dimensions						h1	h2	h3	h4
		inches			mm						
		H	W	D	H	W	D				
<b>Solid Front</b>											
7502630	12 in front/3 on sides	25.0	24.0	8.0	631.0	600.0	210.0	-	-	-	-
7502660	12 in front/6 on sides	25.0	24.0	14.0	631.0	600.0	360.0	-	-	-	-
<b>Viewing Window</b>											
7502035	12	24.7	24.0	20.0	628.0	600.0	500.0	508.0	501.0	534.0	540.0
7502045	15	30.0	24.0	20.0	762.0	600.0	500.0	642.0	634.0	667.0	673.0
7502055	18	35.0	24.0	20.0	895.0	600.0	500.0	775.0	767.0	800.0	806.0

### 19" Modular Enclosures



Enclosure											
Part No.	U	Exact outside dimensions						H	W	D	
		inches			mm						
		H	W	D	H	W	D				
7528400	24	47.2	32.0	32.0	1200.0	800.0	800.0				

# SPECIAL SOLUTIONS

## SPECIAL SOLUTIONS

AE/PS EMC Enclosure Solutions ... SPE 1-2

EMC Compatibility ..... SPE 3-4

Seismic/Zone 4 Applications ..... SPE 5-6

Purge/Pressurization Solutions ..... SPE 7-8

These "Special Solution" products reflect additional Rittal solutions that have been engineered for specific applications and do not necessarily reflect off-the-shelf availability. Please contact your Rittal representative for additional information.





# AE/PS EMC Enclosure Solutions



## EMI/RFI Protection

Rittal's special EMC enclosures are based on zinc-coated metal surfaces combined with self-adhesive, low potential EMC gaskets that provide excellent shielding results at an incomparable cost/performance ratio.  
Available off-the-shelf in popular AE and PS size configurations.

## AE Configuration

- Vertical mounting rails on doors
- Right or left hand hinging
- Turnbuckle locks for easy access and secure seal
- Shielded mounting holes allow direct wallmounting or the use of optional mounting feet
- One piece body construction with continuously welded seams
- Mounting panel included
- Mesh over foam EMI gasket

## AE Technical Specifications

- Material:**
- Aluminum-zinc coated sheet steel
  - *Housing:* 16ga/1.5 mm
  - *Door:* 14ga/2 mm
  - *Mounting panel:* 11 gauge hot-dipped galvanized zinc
- Finish/color:**
- *Housing:* aluminum/zinc coating; powder painted on outside, RAL 7032 pebble grey; inside surfaces aluminum-zinc
  - *Mounting panel:* Type M

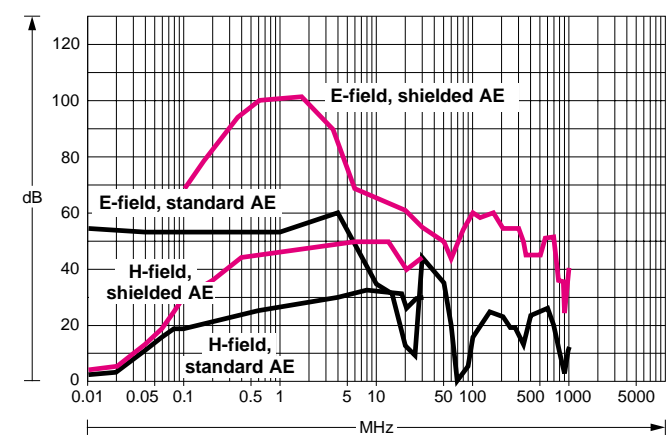
## AE Protection Ratings

**NEMA Type**  1  3R  4  12  13

## AE Technical Drawings

**Pages** .....WMT 37-38

## Noise Protection Diagram For AE



## PS Configuration

- Enclosures can easily be interconnected for multi-bay applications
- Patented 9-fold frame design
- Reversible hinging door
- Maximum strength and stability through welded frame and corner piece design
- Time saving quick assembly method through the use of the .98"/25 mm hole pattern
- Self-adhesive EMC gaskets that provide all-around bonding

## PS Technical Specifications

- Material:**
- *Frame:* 9 fold, roll-formed, aluminum-zinc coated sheet steel
  - *Door:* 14ga/2 mm aluminum-zinc coated sheet steel
  - *Rear wall:* 16ga/1.5 mm aluminum-zinc coated sheet steel
  - *Mounting panel:* 11ga/3 mm hot-dipped galvanized zinc
- Finish/color:**
- *Frame:* aluminum/zinc surface
  - *Door, rearwall and roof:* outside painted, RAL 7032 pebble grey; inside surfaces aluminum-zinc

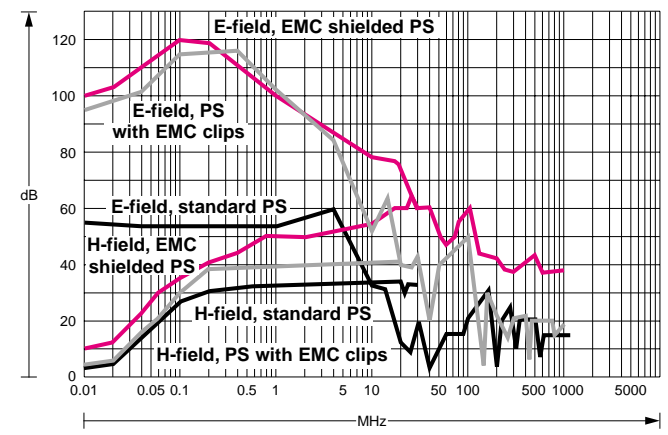
## PS Protection Ratings

**NEMA Type**  1  3R  4  12  13

## PS Technical Drawings

**Pages** .....FST 21-22

## Noise Protection Diagram For PS



AE Enclosure										Mounting Panel				
Part No.	Standard AE Enclosure Part No.	Approximate outside dimensions H"xW"xD"	NEMA rating	Number of doors	Exact outside dimensions						Dimensions			
					inches			mm			inches		mm	
					H	W	D	H	W	D	H	W	H	W
1380700	1380600	15x15x8	1, 12	1	14.96	14.96	8.27	380	380	210	13.98	13.15	355	549
1039700	1039600	15x24x8	1, 12	1	14.96	23.62	8.27	380	600	210	13.98	21.61	355	549
1060700	1060600	24x24x8	1, 12	1	23.62	23.62	8.27	600	600	210	22.44	21.61	570	549
1180700	1180600	40x32x12	1, 12	1	39.37	31.50	11.81	1000	800	300	37.60	29.09	955	739

AE Accessories									
Part No.	Standard AE Enclosure Part No.	Swing frame (also order EL 2093 screws & EL 2092 nuts)	Wallmounting brackets		Base		Handles		Plastic print pocket
			3/8" standoff	1-5/8" standoff	4" high	8" high	Thumb turn	T-handle	
			1380700	1380600	-	2508200	2503200	-	
1039700	1039600	2026200	2508200	2503200	-	-	2576000	2575000	2514000
1060700	1060600	2027200	2508200	2503200	-	-	2576000	2575000	2514000
1180700	1180600	-	2508200	2503200	2818200	2828200	2576000	2575000	2514000

PS Enclosure										Mounting Panel				
Part No.	Standard PS Enclosure Part No.	Approximate outside dimensions H"xW"xD"	NEMA rating	Number of doors	Exact outside dimensions						Dimensions			
					inches			mm			inches		mm	
					H	W	D	H	W	D	H	W	H	W
4806700	4806600	79x32x24	1, 12	1	78.74	31.50	23.62	2000	800	600	74.65	27.52	1896	699
4808700	4808600	79x32x32	1, 12	1	78.74	31.50	31.50	2000	800	800	74.65	27.52	1896	699

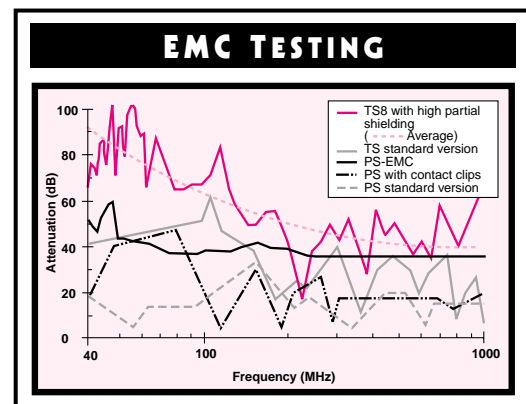
PS Accessories								
Part No.	Standard PS Enclosure Part No.	Side wall (1 pair)	Cable base		Interconnecting		Print pocket	Fluorescent light
			4" high	8" high	Brackets	Pins		
4806700	4806600	4106200	2833000	2834000	4582000	4580000	4118000	9968112
4808700	4808600	4108200	2848000	2849000	4582000	4580000	4118000	9968112



# EMC Compatibility

Because of higher packaging densities and increasing transmission speeds of components, errors frequently occur that can be attributed to electromagnetic interference. Proper shielding techniques are therefore needed to protect the control electronics inside the enclosure and environment outside from radiated electrical noise.

The Rittal TS8 provides two levels of EMC protection. First, the standard enclosure offers high levels of protection against radiated noise with integral grounding clips that are inserted in the gland panels, sidewalls, rear wall and roof during factory assembly. The standard TS8 also provides inherent grounding on all surfaces. If no active components are mounted on the skins/surfaces, bonding straps are not required as electrical continuity is maintained (details available upon request). The second level of protection is obtained by additional components that increase the shielding, including conductive gasketing, aluminum-zinc panels and more. From grounding straps and built-in bonding clips to zinc mounting panels and fully shielded enclosures, Rittal has the appropriate solution to effectively channel common return currents and suppress radiated electrical noise.



The continuous electrical bonding of the flat parts (like sidewalls) with the TS8 frame results in a higher shielding level than the PS system.

Aluminum-zinc roof panels help increase continuous bonding.

Conductive EMC gasketing increases the protection.

EMC TS8 enclosure provides enhanced EMC protection.

Optional aluminum-zinc frame helps protect against radiated noise.



## Technical Information

### Enclosure EMI/RFI Shielding

The requirements and standards for enclosure electromagnetic compatibility are continually increasing with the proliferating application of electronics for industrial process control, information processing and communication equipment. In the United States, the Federal Communications Commission establishes the requirements and regulates the amount of electromagnetic interference, EMI. Since January 1, 1996 the European Union (EU) has enforced legislation, Electromagnetic Compatibility (EMC) Directive 89/336/EEC, which regulates the amount of EMI and Radio Frequency Interference (RFI) that products can emit or must repel to function acceptably.

While the enclosure itself is not covered by these requirements, once the electronic equipment is installed within the enclosure, the package must comply with applicable EMI/RFI directives. Shielding and electromagnetic compatibility are highly specialized with their own terminology. The following definitions will help to specify EMI/RFI compatibility and select enclosures if the acronyms and technology are unfamiliar:

#### Attenuation

is a measure of the ability to contain or repel the EMI/RFI energy. It can also be called shielding effectiveness and is usually expressed in decibels (dB).

#### Decibel

is the measure used to express the effectiveness of a material or system in reducing electromagnetic interference. If a shielded enclosure reduces the EMI by 30 dB, it means the power of the interfering wave will be reduced by a factor of 1000 in passing through the enclosure. If the EMI reduction is 40 dB, the power is reduced by a factor of 10,000.

#### Electromagnetic Emissions

include the energy radiated into the environment intentionally by an antenna or incidentally by an electronic component or power equipment during a switching operation.

#### Electromagnetic Fields

are the invisible fields which surround energized conductors such as wire or antennas. The fields have both electric and magnetic components.

#### Electromagnetic Immunity

is the capability of an electronic component or electrical equipment to perform its intended function in the presence of external electromagnetic fields.

#### EMC

(Electromagnetic Compatibility) is the ability of electronic equipment to perform its intended function in the presence of EMI and RFI disturbances without affecting proper operation.

#### EMI

(Electromagnetic Interference) can emanate from high voltage equipment or power lines, welding equipment, switches, relays, or any device that generates an electric spark or corona. The random voltages or currents generated by these sources are coupled to electronic systems with undesirable results. EMI waves are not well ordered, vary widely in intensity and cause interference over a wide frequency range. The sun is a natural generator of EMI.

#### EMP

(Electromagnetic Pulse) interference is caused by a large and sudden electrical discharge such as lightning. EMP is short duration, but can radiate intense power. Like EMI, EMP is not well ordered and causes interference over a wide range of frequencies.

#### RFI

(Radio Frequency Interference) is caused by radio waves which emanate from commercial radio and television stations, amateur radio broadcasts, airport radar, microwave ovens, etc. Once again the voltages or currents from these sources are coupled to electronic systems with undesirable consequences. Radio waves are usually well defined in terms of amplitude and frequency.

#### How to interpret an EMC diagram?

In all diagrams, the damping value of an enclosure is shown as a function of the anticipated interference frequency and the type of field; electric field E, magnetic field H, and the combined electromagnetic field. In the diagram below for example, a frequency of 10 MHz results in the following damping values:

**Point 1:** Electric field high: 72 dB

**Point 2:** Electric field middle: 58 dB

**Point 3:** Electric field standard: 42 dB

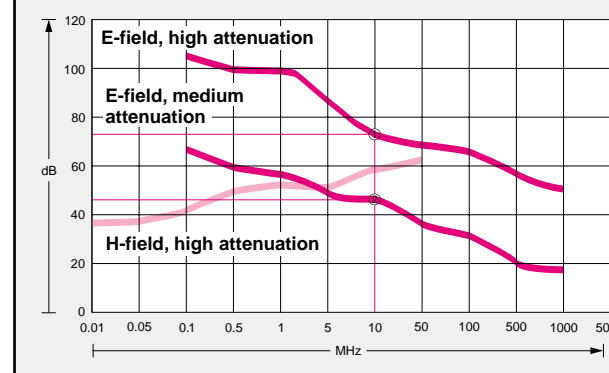
In all diagrams, the attenuation value is expressed in the physical unit "dB" on the vertical Y-axis.

This unit represents the logarithmic ratio between the fields inside and outside the enclosure.

The frequency spectrum is expressed as a logarithmic progression on the horizontal X-axis. The damping value "a" is determined as follows:

$$a = 20 \log \frac{E_0}{E_1} \quad \text{and} \quad a = 20 \log \frac{H_0}{H_1}$$

Attenuation in dB	Ratio between inside/outside
6	1/2
20	1/10
40	1/100
60	1/1000



# Seismic/Zone 4 Applications

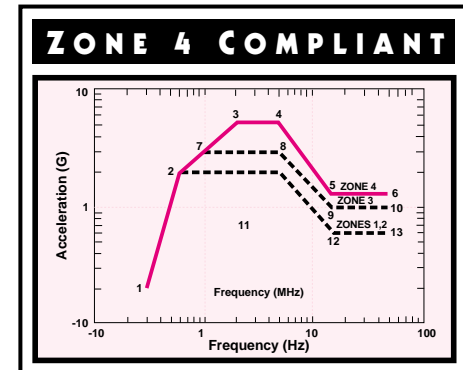
With the explosion of networking equipment deployed all over the world, many companies are seeing that equipment is being exposed to more and more hostile environments. One of the more demanding environments is any place there is a chance for seismic activity. The areas that are most susceptible to seismic activity have been identified as Zone 4.

Rittal's TS8 enclosures have been built and tested to fully comply with these stringent requirements. Our standard TS8 enclosure has been tested with 330 pounds on the mounting panel with a standard plinth to achieve a Zone 3 certification. With 400 pounds and an enhanced plinth, the TS8 was Zone 4 certified. Additional add-on components enable the seismic TS8 to be strengthened and increase its weight capability to 1100 pounds.

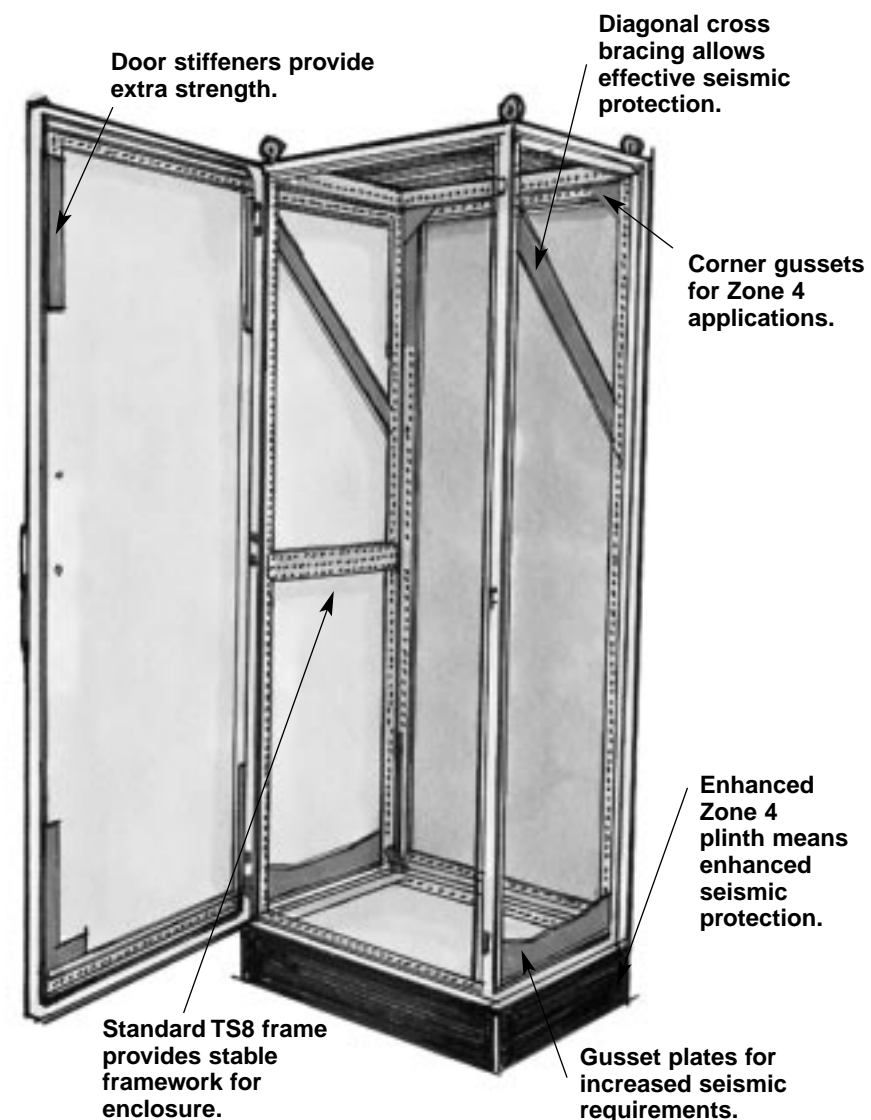


Seismic Level	Weight (lbs/kg)	Enclosure Model
Zone 3	330 lbs/150 kg	Standard TS8 — no upgrades
Zone 4	400 lbs/180 kg	Standard TS8 with enhanced plinth
Zone 4	1100 lbs/500 kg	Seismic TS8 with door stiffener, corner gussets and diagonal brackets

The TS8 offers Zone 3 certification out of the box. Additional upgrade features enable the TS8 to be strengthened and thus made suitable for Zone 4 earthquake regions.

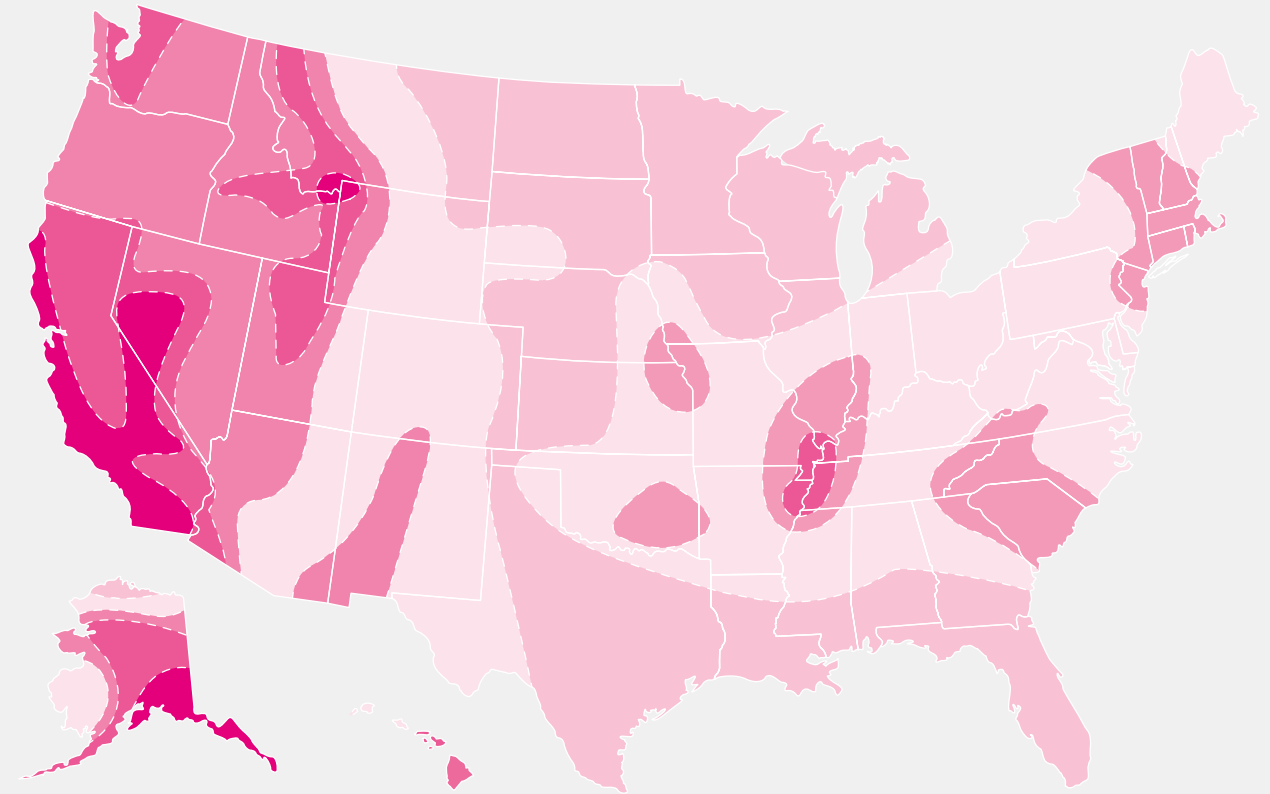


**Note:**  
The PS enclosure series is also available in Zone 4 compliant configurations for 19" server applications. Please contact your local Rittal representative for additional information.



## Zone 4 Cabinet Specifications

Rittal offers NEBS GR-63 compliant Zone 4 cabinets as a standard product. These cabinets were tested at an approved test lab to fully comply\* with all of Zone 4 requirements for enclosures. These cabinets were loaded with 1000 lbs of weight to simulate one of the most strenuous applications found in today's networking environment. This 1000 lbs of weight was distributed with 50% of the weight below the center of gravity of the cabinet and the other 50% located above.



- Seismic Zone 4
  - Seismic Zone 3
  - Seismic Zone 2B
  - Seismic Zone 2A
  - Seismic Zone 1
  - Seismic Zone 0
- Seismic map provided courtesy of FEMA.

\*All testing performed to NEBS GR-63. Enclosures preconfigured as described and comply to seismic testing criteria. Every application is different. Final certification of system is the responsibility of the system integrator.



# Purge/Pressurization Solutions

## Purge/Pressurization Systems

Available for Type X, Y and Z purge/pressurization applications, Rittal's new purge systems are the ideal fit for these types of hazardous areas. The units, which meet Class/Division standards as well as Zone classification for North America, are designed for enclosures up to 200 cubic feet (larger volume systems upon request). The purge/pressurization components are UL and cUL classified and are recommended for Rittal enclosures rated NEMA Type 4 or 12.



Y-Z Purge/Pressurization Systems												
Part No.	Reclassification certification (from/to)		Cubic feet capacity*	Panel mounting configuration	Pressure vent		Exact dimensions					
	Type Y	Type Z			Straight	90° Angle	inches			mm		
							H	W	D	H	W	D
9968221	Class I/Div. 1 to Div. 2	Class I/Div. 2 to non-hazardous	< 75 cubic feet	Left	9968229	9968230	15.0	11.5	6.3	381.0	292.1	158.8
9968222	Class I/Div. 1 to Div. 2	Class I/Div. 2 to non-hazardous	< 75 cubic feet	Right	9968229	9968230	15.0	11.5	6.3	381.0	292.1	158.8
9968223	Class I/Div. 1 to Div. 2	Class I/Div. 2 to non-hazardous	< 75 cubic feet	Top	9968229	9968230	12.0	15.3	6.3	304.8	388.6	158.8
9968224	Class I/Div. 1 to Div. 2	Class I/Div. 2 to non-hazardous	< 75 cubic feet	Bottom	9968229	9968230	12.0	15.3	6.3	304.8	388.6	158.8
9968225	Class I/Div. 1 to Div. 2	Class I/Div. 2 to non-hazardous	< 200 cubic feet	Left	9968231	9968232	16.3	13.5	8.0	412.8	342.9	203.2
9968226	Class I/Div. 1 to Div. 2	Class I/Div. 2 to non-hazardous	< 200 cubic feet	Right	9968231	9968232	16.3	13.5	8.0	412.8	342.9	203.2
9968227	Class I/Div. 1 to Div. 2	Class I/Div. 2 to non-hazardous	< 200 cubic feet	Top	9968231	9968232	12.0	16.8	8.0	304.8	425.5	203.2
9968228	Class I/Div. 1 to Div. 2	Class I/Div. 2 to non-hazardous	< 200 cubic feet	Bottom	9968231	9968232	12.0	16.8	8.0	304.8	425.5	203.2

\* Calculation of cubic feet capacity = height(ft) x width(ft) x depth(ft) of enclosure. For bayed enclosures you must add the cubic feet of each enclosure.

X Purge/Pressurization Systems													
Part No.	Configuration	Reclassification certification (from/to)	Cubic feet capacity*	Installation location of control unit	Flow monitor type	Solenoid valve kit	Exact dimensions						
							Type X	inches			mm		
								H	W	D	H	W	D
9968240	Control unit	Class I-II/Div. 1 to non-hazardous	—	Safe area	—	—	9.1	4.8	3.8	229.9	121.9	96.5	
9968241	Control unit	Class I-II/Div. 1 to non-hazardous	—	Hazardous area	—	—	11.8	9.8	6.4	298.5	247.7	163.6	
9968242	Pressure monitor	—	< 15 cubic feet	—	Compensation	9968244	4.7	4.7	3.5	119.9	119.9	89.9	
9968243	Pressure monitor	—	< 15 cubic feet	—	Continuous	9968244	4.7	4.7	3.5	119.9	119.9	89.9	
9968245	Pressure monitor	—	> 15 cubic feet	—	Compensation	9968247	4.7	4.7	3.5	119.9	119.9	89.9	
9968246	Pressure monitor	—	> 15 cubic feet	—	Continuous	9968247	4.7	4.7	3.5	119.9	119.9	89.9	

\* Calculation of cubic feet capacity = height(ft) x width(ft) x depth(ft) of enclosure. For bayed enclosures you must add the cubic feet of each enclosure.

## Configuration

### Type Y-Z Purge/Pressurization Systems

- Same panel can be used for both Type Y or Z systems
- Type Y system reduces the inside of the enclosure from Class I/Division 1 to Class I/Division 2
- Type Z system reduces the inside of the enclosure from Class I/Division 2 to non-hazardous
- Available for enclosure sizes ranging from 75 to 200 cubic feet
- Panels are available specifically for left, right, top, or bottom mounting
- All components mounted to a T-304 stainless steel panel
- All tubes and fitting are T-316 stainless steel
- Includes low pressure alarm output
- Filter-regulator with pressure gauge provides clean gas to the enclosure
- UL and cUL Classified
- Meets the requirements of NFPA 496 and ISA RP12.4-1996 standards
- Pressure vent is required for all systems and is available in a straight or 90° versions

### Type X Purge/Pressurization Systems

- Type X system can be configured by combining a control unit, pressure monitor and 3-way solenoid valve package
- Type X systems enable general purpose equipment to be operated inside a hazardous area
- Available for enclosure sizes ranging from less than or greater than 15 cubic feet
- Control units are available for general purpose and hazardous areas
- Control circuits are intrinsically safe
- Control units disables power if airlock is broken
- Fully automatic purge/pressurization is controlled by cycle timers
- LED display and indicators show time remaining and purge/pressurization stages
- Can be used for both 120 VAC or 220 VAC
- Control units and pressure vent combination are UL and cUL Classified
- Meets NFPA 496 and ISA RP12.4-1996 standards for Type X purging
- Pressure monitor and solenoid valve kit are required for all systems
- Pressure monitors are available in compensation or continuous flow monitoring

## Technical Specifications

### Type Y- Z Purge/Pressurization Systems

- *Panel:* brushed T-304 stainless steel
- *Tubes:* T-316 stainless steel
- *Fittings:* Swagelok T-316 stainless steel
- *Purging and pressurization valve:* T-316 stainless steel
- *Differential pressure gauge:* die-cast aluminum housing with baked hammerloid epoxy finish
- *Differential pressure gauge:* impact resistant face
- *Low pressure alarm housing:* anodized cast aluminum

- *Filter regulator and pressure gage:* cast aluminum body with polyurethane resin (ISOPLAST 304) components
- *Pressure vents:* aluminum housing with 1" NPT mounting nut and gasket

### Type X Purge/Pressurization Systems

- *Control unit/safe area:* Polycarbonate housing and clear lid
- *Control unit/hazardous area:* Cast aluminum enclosure with viewing port
- *Pressure monitor:* epoxy coated aluminum housing
- *Filter regulator:* cast aluminum body with polyurethane resin (ISOPLAST 304) components
- *Solenoid valve:* epoxy coated aluminum housing
- *Tubes:* 1/4" or 3/8" OD nylon
- *Fittings:* nickel-plated brass

## Certifications / Approvals

### Type Y- Z Purge Pressurization Systems

- UL and cUL Classified
- *Type Y:* Class I, Div.1 to Class I, Div. 2/ Class I, Zone 1 to Class I, Zone 2
- *Type Z:* Class I, Div. 2 to non-hazardous/ Class I, Zone 2 to non-hazardous
- Panels with low pressure alarm are certified for Group C-D/IIIB

### Type X Purge/Pressurization Systems

- Control units and pressure vent combination are UL and cUL Classified
- Control circuits (except solenoid): Intrinsically safe, Class I, II, Div. 1 and 2, Group A-G/Class I, Zone 1
- Pressurization system: NFPA 496 standard for Type X purging

## Technical Information

### Hazardous Area Classification

Hazardous areas are classified for purposes of defining wiring practices, electrical enclosures, protection methods and so on. The three classifications are Class, Division and Group and are explained below:

Class defines the type of hazard, designated by roman numerals:

- I. Flammable gases or vapors
- II. Combustible dust
- III. Ignitable fibers

Division defines the condition under which the hazard is present:

- 1 Hazards commonly exist under normal operating conditions.
- 2 Hazards exist only during faulty operating conditions.

Group defines the hazardous substance:

- A, B, C, D Gases  
E, F, G Dusts

For more information on hazardous area classifications, refer to article 500 of NFPA 70, National Electric Code.

### Types of Systems

The NFPA 496 standard recognizes three types of pressurization: X, Y and Z.

Type X systems reduce the classification of the enclosure from Division 1 to non-hazardous.

Type Y systems reduce the classification of the enclosure from Division 1 to Division 2.

Type Z systems reduce the classification of the enclosure from Division 2 to non-hazardous.

For European regulations on purge systems, refer to standards IEC79-2 and EN50 016.

### Choosing a System

The following information is an overview of how to select an X, Y or Z purge system. There are four primary factors that determine which purge system is appropriate for your application:

- Classification of the area.
- Ratings of the equipment inside the enclosure.

- Enclosure size, position of doors, windows and any accessories.
- Power requirement to the enclosure (Type X systems).

### Area Classification

The area classification determines the type of purge system needed. For Division 1 areas, the equipment inside the enclosure determines whether a Type X system (equipment rated for general purpose) or a Type Y system (equipment rated for Division 2) can be used.

### Equipment Ratings

The rating on the equipment inside the enclosure becomes important in evaluating which purge system to use in a Division 1 area. If the Division 1 area contains at least one general purpose component, a Type X system is required. If all devices in the enclosure are rated for Division 2, then a Type Y system can be used. Special conditions exist for enclosures such as gas analyzers and chromatographs that contain a flammable gas. Refer to NFPA 496 1998 for more information.

### Enclosure Size

The size of the enclosure determines the size of the purge system. How the system is mounted depends on the position of doors, windows and cable entrances.

### Power Requirement

For Type X systems, the control unit operates the power disconnect to the enclosure. If the power requirement for the enclosure exceeds the contact ratings on the control unit, a control relay must be added. If the control relay is located in the hazardous area, it must be rated for that hazardous location. As power increases inside the enclosure, high temperatures become a problem. Refer to NFPA 496 1998 for more information.







# CLIMATE CONTROL

## CLIMATE CONTROL PRODUCTS

1S Filter Fans/Pagoda Roof Fans ..... CLI 1-2

Air Conditioners ..... CLI 3-4

Micro/Mini Air Conditioners ..... CLI 5-6

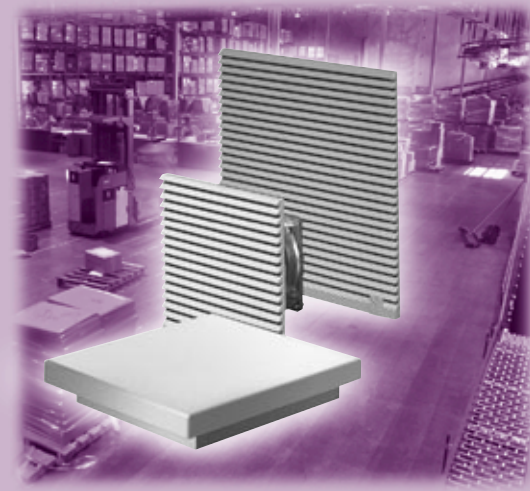
Air/Air Heat Exchangers ..... CLI 7-8

Air/Water Heat Exchangers ..... CLI 9

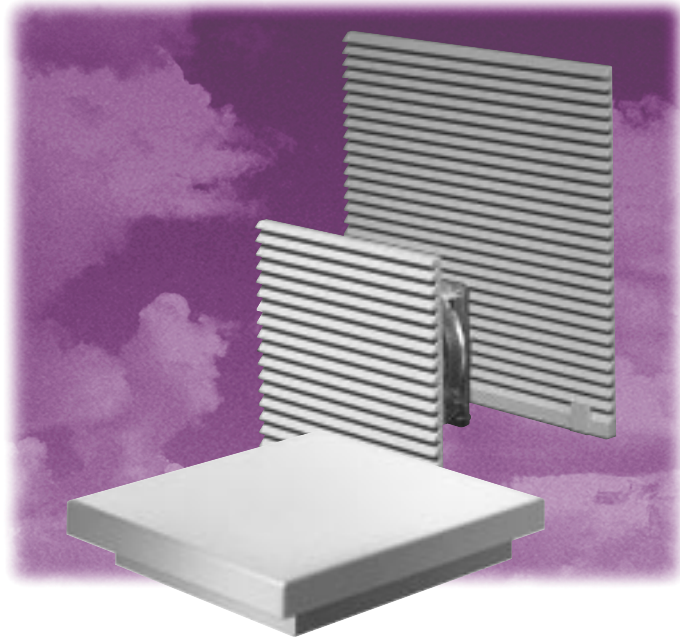
Enclosure Heaters ..... CLI 10

Vortex Kooler Enclosure Coolers ..... CLI 11-12

Technical Drawings ..... CLI 13-26



# 1S Filter Fans And Pagoda Roof Fans



## 1S Filter Fans and Pagoda Roof Fans

Rittal filter fans provide an off-the-shelf, easy to install, economical, and effective method for providing enclosure cooling when the allowable enclosure internal temperature is higher than the ambient temperature. Available in a variety of sizes and voltages, filter fans include dense polyester filters, aerodynamically designed polymer plenums, long life fans, terminal blocks for easy wiring, and attractive aesthetics.

Filter fans carry UL/CSA recognition and CE marking for the entire assembly. IP 54/NEMA 12 protection offered via special sealing gasket and fine filter. Unlike many competitive products, Rittal filter fans' cfm rating are derated to account for filter's and louver's flow resistance.

### Configuration

- UL/CSA recognition, CE compliance
- Low profile design
- Quick installation
- Long life ball bearing fan motors
- IP 54/NEMA 12 with optional sealing gasket and fine filter
- Off-the-shelf availability
- Terminal block connection
- Blow air into enclosure (except 9964980 and pagoda roof fans)

### Technical Specifications

#### Material:

- Polymer plenum/louver
- Metal fan housing

#### Finish:

- RAL 7032 pebble grey (.100/.115/.200)
- RAL 7035 light grey available (.107/.117/.207)

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV  CE

### Technical Drawings

Pages .....CLI 13-15

### CLI Technical Information

Pages .....TEC 20-33

Filter Fans/Pagoda Roof Fans											
Part No.	Rating cfm <sup>1</sup>	Exact outside dimensions						Voltage	Current	Noise dBa	Temperature range
		inches			mm						
		H	W	D <sup>2</sup>	H	W	D <sup>2</sup>				
<b>1S Filter Fans</b>											
3321100	15	4.6	4.6	1.7	117.0	117.0	42.0	230/50/60	69/58 mA	41/46	14-131°F
3321115/3321117	15	4.6	4.6	1.7	117.0	117.0	42.0	115/50/60	138/115 mA	41/46	14-131°F
3322115/3322117*	40	5.9	5.9	2.2	149.0	149.0	57.0	115/50/60	0.11/0.12 A	46/49	14-131°F
3322100/3322107*	40	5.9	5.9	2.2	149.0	149.0	57.0	230/50/60	0.24/0.23 A	46/49	14-131°F
3323115/3323117*	70	8.0	8.0	3.3	204.0	204.0	82.5	115/50/60	0.24/0.23 A	46/49	14-131°F
3323100/3323107*	70	8.0	8.0	3.3	204.0	204.0	82.5	230/50/60	0.11/0.12 A	46/49	14-131°F
3325115/3325117*	155	10.0	10.0	4.1	255.0	255.0	105.0	115/50/60	0.53/0.49 A	54/56	14-131°F
3325100/3325107*	155	10.0	10.0	4.1	255.0	255.0	105.0	230/50/60	0.28/0.24 A	54/56	14-131°F
3326115/3326117*	330	12.7	12.7	5.1	323.0	323.0	129.0	115/50/60	0.58/0.70 A	59/61	14-131°F
3326100/3326107*	330	12.7	12.7	5.1	323.0	323.0	129.0	230/50/60	0.29/0.35 A	59/61	14-131°F
3327100	425	12.7	12.7	5.7	323.0	323.0	145.0	230/50/60	0.65/0.95 A	75/76	14-131°F
3327115	425	12.7	12.7	5.7	323.0	323.0	145.0	115/50/60	1.5/2.0 A	75/76	14-131°F
9964980 <sup>3</sup>	680	12.7	12.7	5.7	323.0	323.0	145.0	115/50/60	1.5 A	73	14-131°F
<b>Pagoda Roof Fans</b>											
9966814	360	20.8	17.6	2.2	529.0	446.0	55.0	115/50/60	0.72 A	59	14-140°F
9966815	360	20.8	17.6	2.2	529.0	446.0	55.0	230/50/60	0.36 A	59	14-140°F
9966892	Roof only	20.8	17.6	2.2	529.0	446.0	55.0	-	-	-	-
3149000	210	16.5	13.4	1.7	420.0	340.0	44.0	230/50/60	0.20	53	14-140°F
3169000	210	16.5	13.4	1.7	420.0	340.0	44.0	115/50/60	0.55	59	14-140°F
3148000	Roof only	16.5	13.4	0.6	420.0	340.0	15.0	-	-	-	-

Individual Fans												
Part No.	For enclosure	Rating cfm <sup>1</sup>	Exact outside dimensions						Voltage	Current	Noise dBa	Temperature range
			inches			mm						
			H	W	D <sup>2</sup>	H	W	D <sup>2</sup>				
7980110	-	100	10.0	10.0	3.5	254.0	254.0	89.0	115/60	0.5 A	50	-4-140°F
9964163	-	500	4.6	4.6	1.0	119.0	119.0	25.0	115/50/60	0.1 A	49	-4-158°F
9965364	TS/PS	100	-	-	-	-	-	-	115/50/60	-	-	-

<sup>1</sup> Unimplemented airflow (includes filter and louver) <sup>2</sup> Denotes depth filter fan extends into enclosure. <sup>3</sup> RAL 7032, exhaust mode only, UL/CSA on fan motor only.

\* Part No. 3322117/107/207, 3323117/107/207, 3325117/107/207, 3326117/107/207 comes standard in RAL 7035 (light grey).

Accessories						
Part No.	Exhaust filter/louver	Standard replacement filter	Fine filter	Gasket	Rain cover (Type 304 stainless steel)	10' power cord/plug
<b>1S Filter Fans</b>						
3321100	3321200	3321700	-	-	3321800	-
3321115/3321117	3321200	3321700	-	-	3321800	-
3322115/3322117	3322200/3322207	3322700	-	3322900	3322800	9962136
3322100/3322107	3322200/3322207	3322700	-	3322900	3322800	9965837
3323115/3323117	3323200/3323207	3171100	3181100	3191100	3323800	9962136
3323100/3323107	3323200/3323207	3171100	3181100	3191100	3323800	9965837
3325115/3325117	3325200/3325207	3172100	3182100	3192100	3324800	9962136
3325100/3325107	3325200/3325207	3172100	3182100	3192100	3324800	9965837
3326115/3326117	3326200/3326207	3173100	3183100	3193100	3326800	9962136
3326100/3326107	3326200/3326207	3173100	3183100	3193100	3326800	9965837
3327100	3326200	3327700	3183100	3193100	3326800	9965837
3327115	3326200	3327700	3183100	3193100	3326800	9962136
9964980 <sup>3</sup>	3326200	3327700	3183100	3193100	3326800	9962136
<b>Pagoda Roof Fans</b>						
	Exhaust filter/louver	Thermostat	Fine filter	Gasket	Rain cover	10' power cord/plug
9966814	3326200	311000	-	-	-	-
9966815	3326200	311000	-	-	-	-
9966892	3326200	-	-	-	-	-
3149000	3326200	3110000	-	-	-	-
3169000	3326200	3110000	-	-	-	-
3148000	3326200	-	-	-	-	-

Accessories		
Part No.	Exhaust filter/louver	Thermostat
7980110	3322200/3322207	3110000
9964163	3326200	3110000
9965364	-	-



# Air Conditioners



## Pro-Ozone Industrial Air Conditioners

Designed to provide reliable cooling performance in a variety of industrial environments, the Rittal line of enclosure air conditioners are proven performers in a variety of applications around the world. Providing temperature protection to sensitive electronics in ambient temperatures up to 131°F while integrating seamlessly into the enclosure is what sets Rittal air conditioners apart from the competition. Global approvals and a variety of available voltages ensure that the air conditioner will be accepted wherever you are shipping your products.

### Configuration

- UL/CUL recognition, CE compliance
- CFC/HCFC-free R134a refrigerant
- Long life radial fans
- Exterior or interior mount for wallmount versions
- Energy saving TXV technology
- 50/60 Hz operation
- Easy filter change
- High pressure safety control
- Adjustable thermostat
- Off-the-shelf availability
- Terminal block connection

### Technical Specifications

**Material:**

- Steel housing, polymer louvers

**Finish:**

- RAL 7032 pebble grey

### Protection Ratings

**NEMA Type**

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	4	4X	12	13

### Certifications/Approvals

**Listings**

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
UL	CUL	CSA	TÜV	CE

### Technical Drawings

**Pages** .....CLI 16-19

### CLI Technical Information

**Pages** .....TEC 20-33

### Roofmount Air Conditioners

Part No.	Rating BTU/hr <sup>1</sup>	Exact outside dimensions						Voltage	Temperature control	Current	Temperature range	Weight lbs
		inches			mm							
		H	W	D	H	W	D					
3272100	2950	13.39	23.62	14.88	340.0	600.0	378.0	115/50/60	Thermostat	6.3/6.6 A	68-131°F	90.0
3296100	2950	13.39	23.62	14.88	340.0	600.0	378.0	230/50/60	Thermostat	3.2/3.9 A	68-131°F	84.0
3280100	4800	15.7	23.6	13.4	400.0	600.0	340.0	115/50/60	Thermostat	10.5/12.8 A	68-131°F	110.0
3290100	4800	15.7	23.6	13.4	400.0	600.0	340.0	230/50/60	Thermostat	5.3/6.0 A	68-131°F	97.0
3256100	7030	18.0	24.0	18.0	454.0	600.0	460.0	230/50/60	Thermostat	8.9/9.8 A	68-131°F	119.0
3261140	9550	16.0	28.0	24.0	400.0	700.0	600.0	460/60-3~	Thermostat	2.8 A	68-131°F	171.0

<sup>1</sup> 60 Hz cooling performance at 95°F ambient, 95°F internal temperature per DIN 3168.

### Wallmount Air Conditioners

Part No.	Rating BTU/hr <sup>1</sup>	Exact outside dimensions						Voltage	Temperature control	Current	Temperature range	Weight lbs
		inches			mm							
		H	W	D	H	W	D					
3281100	3300	37.5	15.8	9.1	950.0	400.0	230.0	115/50/60	Thermostat	6.5/7.6 A	68-131°F	95.0
3293100	3300	37.5	15.8	9.1	950.0	400.0	230.0	230/50/60	Thermostat	3.0/3.6 A	68-131°F	88.0
3279100	4950	49.8	15.8	10.2	1265.0	400.0	260.0	115/50/60	Thermostat	11.5/12.0 A	68-131°F	126.0
3298100	4950	49.8	15.8	10.2	1265.0	400.0	260.0	230/50/60	Thermostat	5.5/5.7 A	68-131°F	119.0
3260460	5575	50.0	16.0	10.0	1265.0	400.0	260.0	460/60-3~	Microcontroller	2.0 A	68-131°F	132.0
3261461	5575	50.0	16.0	10.0	1265.0	400.0	260.0	460/60-3~	Thermostat	2.0 A	68-131°F	132.0
3390100	7575	62.0	16.0	12.0	1580.0	400.0	290.0	230/50/60-3~	Thermostat	6.9/8.9 A	68-131°F	146.0
3390115	7575	62.0	16.0	12.0	1580.0	400.0	290.0	115/50/60	Thermostat	13.8/17.8 A	68-131°F	154.0
3390146	7575	62.0	16.0	12.0	1580.0	400.0	290.0	460/60-3~	Thermostat	2.5 A	68-131°F	152.0
3392100	9965	62.0	16.0	12.0	1580.0	400.0	290.0	230/50/60	Thermostat	8.2/10.0 A	68-131°F	152.0
3392115	9965	62.0	16.0	12.0	1580.0	400.0	290.0	115/50/60	Thermostat	16.4/20.0 A	68-131°F	161.0
3392146	9965	62.0	16.0	12.0	1580.0	400.0	290.0	460/60-3~	Thermostat	3.5 A	68-131°F	161.0
3391560	15940	62.0	20.0	14.0	1580.0	500.0	340.0	460/60-3~	Microcontroller	5.3 A	68-131°F	187.0

<sup>1</sup> 60 Hz cooling performance at 95°F ambient, 95°F internal temperature per DIN 3168.

### Accessories

Part No.	Foam filter	Metal filter	10' power cord
<b>Roofmount Air Conditioners</b>			
3272100	3286100	3286200	9962136
3296100	3294100	3286200	9965837
3280100	3286100	3286200	-
3290100	3286100	3286200	9965837
3256100	3254000	3254200	9965837
3261140	3286100	3286200	-

### Accessories

Part No.	Foam filter	Metal filter	10' power cord
<b>Wallmount Air Conditioners</b>			
3281100	3294100	3294200	9962136
3293100	3294100	3294200	9965837
3279100	3294100	3294200	9962136
3298100	3294100	3294200	9965837
3260460	3294100	3294200	-
3261461	3294100	3294200	-
3390100	3294100	3294200	9965837
3390115	3294100	3294200	-
3390146	3294100	3294200	-
3392100	3294100	3294200	9965837
3392115	3294100	3294200	-
3392146	3294100	3294200	-
3391560	3294100	3294200	-



# Micro And Mini Air Conditioners



## Micro 1S Air Conditioners

As smaller enclosures such as the pendant arm mounted operator interface system continue to grow in popularity, the need for air conditioners with smaller footprints arises. The micro series air conditioners from Rittal meet this need by providing impressive performance in an extremely small footprint — maintaining a total depth of only 4.75". Additional mounting flexibility is also offered through the ability to mount the unit on the exterior of the enclosure or recessed on the inside of the enclosure. NEMA 12 protection is assured through a sealed barrier between the external and internal airflow paths.

## Mini 1S Air Conditioners

Rittal's mini air conditioner provides effective cooling in a small footprint. Designed for versatility, the wallmount mini air conditioner offers performance in excess of 2000 BTU/hr in a footprint of only 25" H x 16" W. Additional mounting flexibility is also offered through the ability to mount the unit on the wall of the enclosure or recessed into the wall. NEMA 12 protection is assured through a sealed barrier between the external and internal airflow paths.

## Configuration

- UL/CUL recognition, CE compliance
- CFC/HCFC-free R134 a refrigerant
- Overtemperature alarm contact (Micro only)
- Exterior or interior mount
- 50/60 Hz operation
- Long life radial fans
- Off-the-shelf availability
- Terminal block connection
- Thermostat control

## Technical Specifications

### Material:

- Steel housing, polymer louvers

### Finish:

- RAL 7032 pebble grey

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV  CE

## Technical Drawings

**Pages** .....CLI 20-21

## CLI Technical Information

**Pages** .....TEC 20-33

Micro 1S Air Conditioners												
Part No.	Rating BTU/hr <sup>1</sup>	Exact outside dimensions						Voltage	Mounting	Current	Temperature range	Weight lbs
		inches			mm							
		H	W	D	H	W	D					
3206100	1175	12.0	20.0	5.0 <sup>2</sup>	300.0	490.0	120.0	115/50/60	Horizontal	3.5/3.8 A	68-122°F	35.0
3204100	1175	12.0	20.0	5.0	300.0	490.0	120.0	230/50/60	Horizontal	1.5 A	68-122°F	29.0
3205100	1230	20.5	10.6	5.0 <sup>2</sup>	520.0	270.0	120.0	115/50/60	Vertical	3.5/3.6 A	68-122°F	35.0
3203100	1230	20.5	10.6	5.0	520.0	270.0	120.0	230/50/60	Vertical	1.8/1.6 A	68-122°F	29.0

<sup>1</sup> 60 Hz cooling performance at 95°F ambient, 95°F internal temperature per DIN 3168 <sup>2</sup> External transformer mounts to back of unit, 53 mm deep x 115 mm.

Mini 1S Air Conditioners												
Part No.	Rating BTU/hr <sup>1</sup>	Exact outside dimensions						Voltage	Mounting	Current	Temperature range	Weight lbs
		inches			mm							
		H	W	D	H	W	D					
3266100	1300	13.4	23.6	13.7	340.0	600.0	348.0	115/50/60	Roof	4.5/5.2 A	68-122°F	68.0
3265100	1300	13.4	23.6	13.7	340.0	600.0	348.0	230/50/60	Roof	2.2/2.5 A	68-122°F	57.0
3262100	2400	25.0	15.75	9.76	635.0	400.0	248.0	115/50/60	Wall	5.1/6.0 A	68-122°F	70.0
3269100	2400	25.0	15.75	9.76	635.0	400.0	248.0	230/50/60	Wall	3.1/4.0 A	68-122°F	66.0

<sup>1</sup> 60 Hz cooling performance at 95°F ambient, 95°F internal temperature per DIN 3168.

Accessories		
Part No.	Foam filter	10' power cord
3206100	9965899	9965837
3204100	9965899	9965837
3205100	9965899	9962136
3203100	9965899	9962136

Accessories			
Part No.	Foam filter	Metal filter	10' power cord
3266100	3267100	-	9962136
3265100	3267100	-	9965837
3262100	3294100	3294200	9962136
3269100	3294100	3294200	9965837

# Air/Air Heat Exchangers



## Techline Air/Air Heat Exchangers

Rittal Techline air/air heat exchangers provide a low maintenance, high NEMA protection, and lightweight solution for removing heat from enclosures when the allowable internal temperature is higher than the ambient temperature. The high performance, long life, radial fans along with the wide heat exchanger channel spacing provide significant results — including filterless operation whereby any dirt in the ambient airpath is exhausted back out of the heat exchanger. A separate internal airpath ensures that no dirty air is drawn through the enclosure. Lightweight aluminum housings as well as internal or external mounting options provide for flexible, easy installation.

## Outdoor/NEMA 4 Air/Air Heat Exchangers

Provide a low maintenance, high NEMA protection, and lightweight solution for removing heat from enclosures when the allowable internal temperature is higher than the ambient temperature. The epoxy sealed impingement style heat exchanger core meets Bellcore GR 487 salt fog and mil Std 810E blowing dust requirements, and the closed cell neoprene gasketing helps maintain NEMA 4 enclosure protection. A separate internal air path ensures that no dirty air is drawn in through the enclosure. Lightweight aluminum housings as well as internal or external mounting options provide for flexible, easy installation.

## Configuration

- UL/CUL recognition, CE compliance (NEMA 12 models)
- Long life, powerful radial fans
- Internal or external mounting
- Lightweight/easy installation
- Separate internal and external airpaths
- Easily removable core for cleaning (NEMA 12 models)
- Available in multiple sizes and voltages
- Off-the-shelf availability
- 10' power cord (no plug) included

## Technical Specifications

### Material:

- Aluminum housing/core

### Finish:

- Black (NEMA 12)
- RAL 7032 pebble grey (NEMA 4/3R)

## Protection Ratings

NEMA Type  1  3R  4  4X  12  13

## Certifications/Approvals

Listings  UL  CUL  CSA  TÜV  CE

## Technical Drawings

Pages .....CLI 22-23

## CLI Technical Information

Pages .....TEC 20-33

Air/Air Heat Exchangers												
Part No.	Rating W/C <sup>1</sup>	Exact outside dimensions						Voltage	Current <sup>2</sup>	Noise dBa	Temperature range	Weight lbs
		inches			mm							
		H	W	D	H	W	D					
3125110	14.6	15.0	7.4	6.4	380.0	187.5	162.5	115	0.56/.50A	54.0	23-131°F	10.14
3125000	14.6	15.0	7.4	6.4	380.0	187.5	162.5	230	0.28/.25A	54.0	23-131°F	10.14
3126000	18.7	20.0	8.0	6.5	500.0	187.5	162.5	230/50/60	0.28/0.25A	54.0	23-131°F	10.8
3126110	18.7	20.0	8.0	6.5	500.0	187.5	162.5	115/50/60	0.28/0.25A	54.0	23-131°F	10.8
3128000	19.5	20.0	11.0	4.5	500.0	272.0	110.0	230/50/60	0.28/0.25A	61.0	23-131°F	11.24
3128110	19.5	20.0	11.0	4.5	500.0	272.0	110.0	115/50/60	0.28/0.25A	61.0	23-131°F	11.24
3129110	30.0	30.7	10.7	4.3	780.0	271.5	110.0	115	0.72/.90A	67.5	23-131°F	16.31
3129000	30.0	30.7	10.7	4.3	780.0	271.5	110.0	230	0.36/.45A	67.5	23-131°F	16.31
3130000	37.0	29.0	14.0	4.5	730.0	355.0	110.0	230/50/60	0.36A/0.45A	64.0	23-131°F	17.85
3130110	37.0	29.0	14.0	4.5	730.0	355.0	110.0	115/50/60	0.36A/0.45A	64.0	23-131°F	17.85
3131110	42.0	47.2	10.7	4.3	1200.0	271.5	110.0	115	0.72/.90A	62.0	23-131°F	20.5
3131000	42.0	47.2	10.7	4.3	1200.0	271.5	110.0	230	0.36/.45A	62.0	23-131°F	20.5
3133000	63.0	58.0	18.0	4.5	1480.0	439.0	110.0	230/50/60	0.36A/0.45A	68.0	23-131°F	27.5
3133110	63.0	58.0	18.0	4.5	1480.0	439.0	110.0	115/50/60	0.36A/0.45A	68.0	23-131°F	27.5
3134110	69.0	70.1	17.3	4.3	1780.0	439.0	110.0	115	0.72/.90A	61.0	23-131°F	41.6
3134000	69.0	70.1	17.3	4.3	1780.0	439.0	110.0	230	0.36/.45A	61.0	23-131°F	41.6

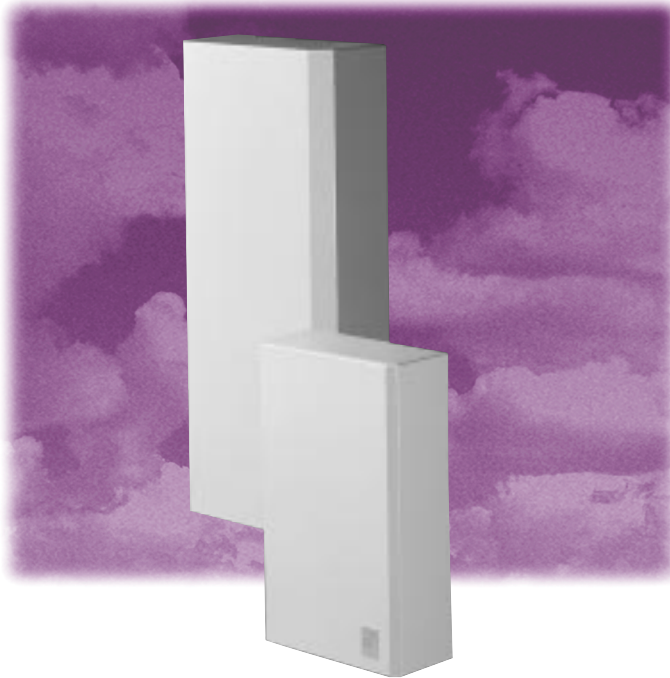
<sup>1</sup> Cooling capacity of heat exchanger only. Additional cooling effect of convection through enclosure walls depends on cabinet dimensions and delta T.

<sup>2</sup> Current draw per fan (2 fans per heat exchanger).

NEMA 4/3R Air/Air Heat Exchangers																
Part No.	Rating W/C <sup>1</sup>	Exact outside dimensions						Voltage	Rated current	Pre-fuse T	External cycle (free delivery)	Internal cycle (free delivery)	Noise level Bellcore GR487	Temperature range		Wt. lbs
		inches			mm									°F	°C	
		H	W	D	H	W	D									
9967581	20	10.25	14.25	7.4	260	362	188	115/50/60	0.54 A/0.52 A	0.75 A	230 cfm/390 m³/h	230 cfm/390 m³/h	64 dBa	-40 to +158	-40 to +70	16
9967582	20	10.25	14.25	7.4	260	362	188	230/50/60	0.26 A/0.28 A	0.38 A	230 cfm/390 m³/h	230 cfm/390 m³/h	64 dBa	-40 to +158	-40 to +70	16
9967584	38	24.25	14.25	7.4	616	362	188	115/50/60	1.1 A/1.0 A	1.5 A	460 cfm/788 m³/h	460 cfm/788 m³/h	67 dBa	-40 to +158	-40 to +70	33
9967585	38	24.25	14.25	7.4	616	362	188	230/50/60	0.52 A/0.56 A	0.75 A	460 cfm/788 m³/h	460 cfm/788 m³/h	67 dBa	-40 to +158	-40 to +70	33
9967587	57	35.25	14.25	7.4	895	362	188	115/50/60	1.6 A/1.5 A	2.0 A	690 cfm/1173 m³/h	690 cfm/1173 m³/h	68 dBa	-40 to +158	-40 to +70	50
9967588	57	35.25	14.25	7.4	895	362	188	230/50/60	0.8 A/0.9 A	2.0 A	690 cfm/1173 m³/h	690 cfm/1173 m³/h	68 dBa	-40 to +158	-40 to +70	50

<sup>1</sup> Cooling capacity of heat exchanger only. Additional cooling effect of convection through enclosure walls depends on cabinet dimensions and delta T.

# Air/Water Heat Exchangers



## Air/Water Heat Exchangers

For the harshest of environments, where ambient temperatures exceed 130°F and the air is exceptionally dirty or oily, air/water heat exchangers provide the best cooling solution. Since ambient air does not enter the heat exchanger, performance is maintained without having to worry about cleaning filters, heat exchange cassettes, or coils. Other advantages include compact footprint, the ability to cool below ambient temperature, lower energy consumption, and lower capital cost than air conditioners when cool plant water is available.

Rittal's air/water heat exchangers include features such as solenoid valves, condensate deflector screens, and overflow drainage paths.



A Complete Line Of Chillers Is Also Available — Check With Your Rittal Representative.

### Configuration

- UL/CUL recognition, CE compliance
- Operation up to 158°F ambient
- Work well in dirty environments
- Provide up to 17,000 BTU/hr in small footprint
- Require only 1-2 gal/minute of water
- Long life radial fan
- Overtemperature alarm contact
- Off-the-shelf availability
- Terminal block connection

### Technical Specifications

#### Material:

- Steel housing

#### Finish:

- RAL 7032 pebble grey

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  CSA  TÜV  CE

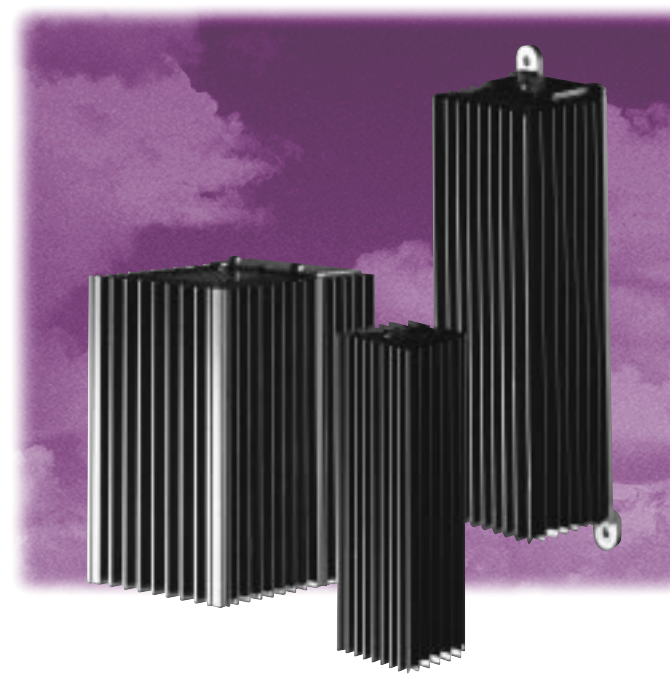
### Technical Drawings

Page .....CLI 24

### CLI Technical Information

Pages .....TEC 20-33

# Enclosure Heaters



## Rittal Enclosure Heaters

Enclosure heaters help ensure that a safe environment inside the enclosure is maintained, even in applications where rapid temperature change results in the dew point being reached, thereby causing condensation on critical electronics. PTC technology means that heater surface temperature is kept at a safe level and that heat output is maximized while energy consumption is minimized.

Additionally, the aluminum fin heat transfer element provides efficient heat distribution. Finally, DIN rail or screw mounting options provide users with maximum flexibility and fast installation.

### Configuration

- UL/CUL/CE approvals (most models)
- Dual voltage 110/230 V (some models)
- Maximum surface temperature of 160°F ensures safety
- Quick mounting via DIN rail or screws

### Technical Specifications

#### Material:

- Aluminum extrusion

#### Finish:

- Black

### Protection Ratings

NEMA Type  1  4  4X  12  13

### Certifications/Approvals

Listings  UL  CUL  TÜV  CE

### Technical Drawings

Page .....CLI 25

### CLI Technical Information

Pages .....TEC 20-33

Air/Water Heat Exchangers											Accessories		
Part No.	Rating BTU/hr <sup>1</sup>	Exact outside dimensions						Voltage	Current	Pressure, psi	Air temperature range	Weight lbs	Power cord
		inches			mm								
		H	W	D	H	W	D						
3214100	2050	19.7	7.9	3.7	500.0	200.0	100.0	230/50/60	0.17/0.18A	15-145	34-158°F	15	9965837
3217100	3400	20.5	11.8	5.3	520.0	300.0	135.0	230/50/60	0.6/0.55 A	15-145	34-158°F	21	9965837
3217115	3400	20.5	11.8	5.3	520.0	300.0	135.0	115/50/60	1.1 A	15-145	34-158°F	21	9962136
3218100	10240	37.4	15.8	7.9	950.0	400.0	200.0	230/50/60	0.42/0.48 A	15-145	34-158°F	46	9965837
3218115	10240	37.4	15.8	7.9	950.0	400.0	200.0	115/50/60	1.0 A	15-145	34-158°F	46	9962136
3216100	17050	55.5	18.0	10.0	1400.0	450.0	250.0	230/50/60	0.9/1.3A	15-145	34-158°F	123	9965837

<sup>1</sup> Cooling capacity at 95°F internal temperature, 50°F water temperature, 0.9 gal/hr flow rate.

Heaters									
Part No.	Rating <sup>1</sup> (watts)	Exact outside dimensions						Voltage	Fuse
		inches			mm				
		H	W	D	H	W	D		
3106000	20.0	4.9	1.8	1.4	125.0	45.0	35.0	110-240 V AC/DC	2.0 A
3115000	30.0	4.3	2.5	2.1	110.0	64.0	54.0	110-240 V AC/DC	2.0 A
3116000	50.0	7.3	2.5	2.1	185.0	64.0	54.0	110-240 V AC/DC	4.0 A
3107000	130.0	5.5	3.1	4.6	140.0	80.0	118.0	110-240 V AC/DC	4.0 A
3102000	300.0	6.6	4.7	4.7	168.0	120.0	120.0	230 V AC	4.0 A
3102110	300.0	6.6	4.7	4.7	168.0	120.0	120.0	115 V AC	4.0 A
9967053	1000.0	5.7	5.7	4.0	145.0	145.0	102.0	115/50/60	12.0 A
9967054	1000.0	5.7	5.7	4.0	145.0	145.0	102.0	230/50/60	6.0 A

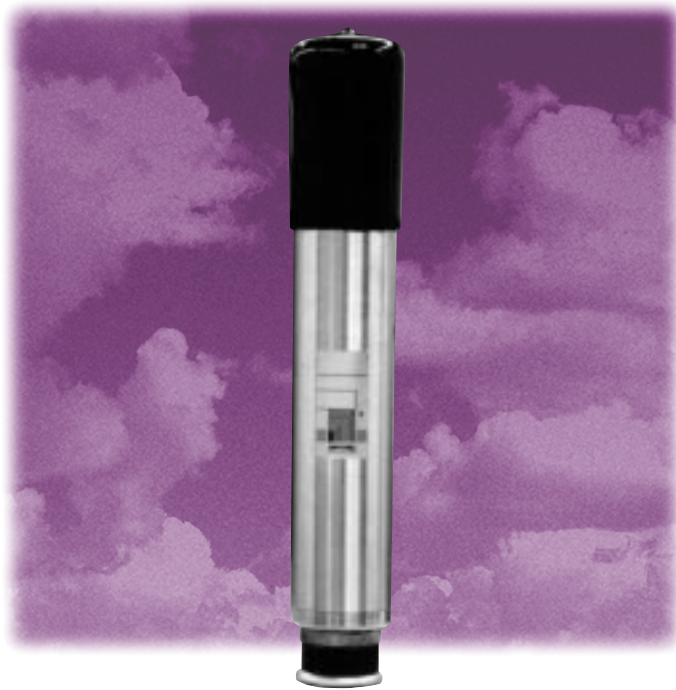
<sup>1</sup> Continuous heat output at 68°F ambient temperature.

Accessories		
Part No.		
3106000	Thermostat	10' power cord
3115000	3110000	-
3116000	3110000	-
3107000	3110000	-
3102000	3110000	9965837
3102110	3110000	9962136
9967053	3110000	9962136
9967054	3110000	9965837





# Vortex Kooler Enclosure Coolers



## Vortex Koolers

These units use compressed air to create a cool stream of air which is distributed inside the enclosure with a hose ducting kit. These Koolers are especially effective in small enclosures, when an existing source of compressed air exists, when heat loads are low to moderate, or when a NEMA 4/4X cooling solution is required. Vortex Koolers are also effective in applications where EMI/RFI must be minimized.

## Configuration

- Includes Vortex Kooler, thermostat, solenoid, filter and ducting kit
- 230 V solenoid is available for 230 V operation

## Technical Specifications

- Material:**
- stainless steel or aluminum

## Protection Ratings

**NEMA Type**  1  4  4X  12  13

## Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV  CE

## Technical Drawings

**Page** .....CLI 26

## CLI Technical Information

**Pages** .....TEC 20-33

Vortex Koolers							
Part No.	NEMA rating	Voltage <sup>1</sup>	Cooling capacity (BTU) <sup>2</sup>	Noise level at dBa at 100 psi	Air consumption SCFM	Pressure range psi	Port size NPT inches
8012903	12	115/50/60	400	69	8	70-150	.125
8012904	12	115/50/60	900	80	15	70-150	.25
8012905	12	115/50/60	1500	83	25	70-150	.25
8012906	12	115/50/60	2500	90	35	70-150	.25
8012907	12	115/50/60	5000	90	70	70-150	.25
8012908	4	115/50/60	900	83	15	70-150	.25
8012909	4	115/50/60	1700	86	25	70-150	.25
8012912	4	115/50/60	2500	90	35	70-150	.25
8012913	4	115/50/60	5000	90	70	70-150	.25
8012910	4X	115/50/60	900	83	15	70-150	.25
8012914	4X	115/50/60	1700	86	25	70-150	.25
8012915	4X	115/50/60	2500	90	35	70-150	.25
8012911	4X	115/50/60	5000	90	70	70-150	.25

<sup>1</sup> 230 V available by substituting 230 V solenoid.

<sup>2</sup> Rated at 100 psig; 70°F/ 21°C inlet air temperature, 90°F/ 32°C thermostat setting, -40°F/ -40°C pressure dew point; derate 30% 110°F ambient, > 2% humidity, derate 25% for 80 psig pressure.

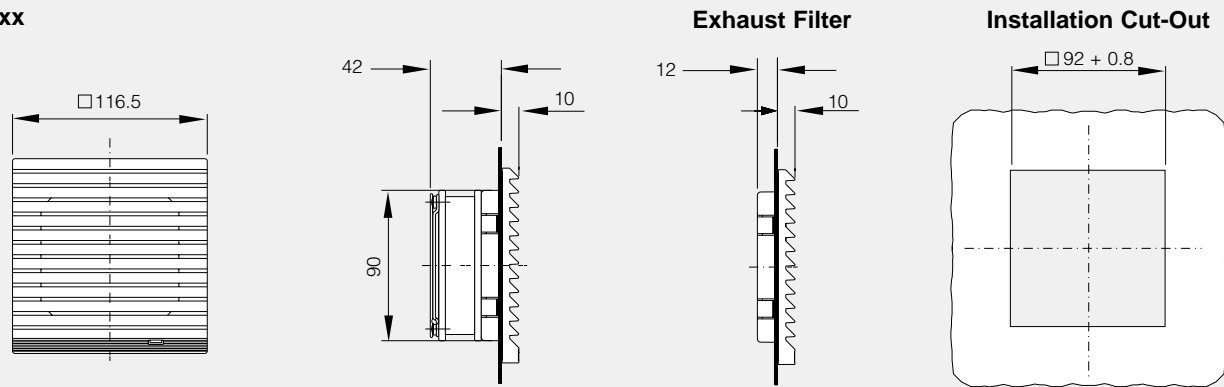
Vortex Accessories		
Part No.	Description	Port size NPT (inches)
8012916	5 micron filter for up to 1700 BTU capacity	.375
8012917	5 micron filter for up to 2500 BTU capacity	.375
8012918	5 micron filter for up to 5000 BTU capacity	.75
8012919	Oil filter for up to 1700 BTU capacity	.375
8012920	Oil filter for up to 2500 BTU capacity	.375
8012921	Water trap for up to 1700 BTU capacity	.375
8012922	Water trap for up to 2500 BTU capacity	.375
8012923	NEMA 12 230 V solenoid for up to 1700 BTU capacity	.25
8012924	NEMA 4/4X 230 V solenoid for up to 1700 BTU capacity	.25
8012925	NEMA 4/4X 230 V solenoid for up to 2500 BTU capacity	.375



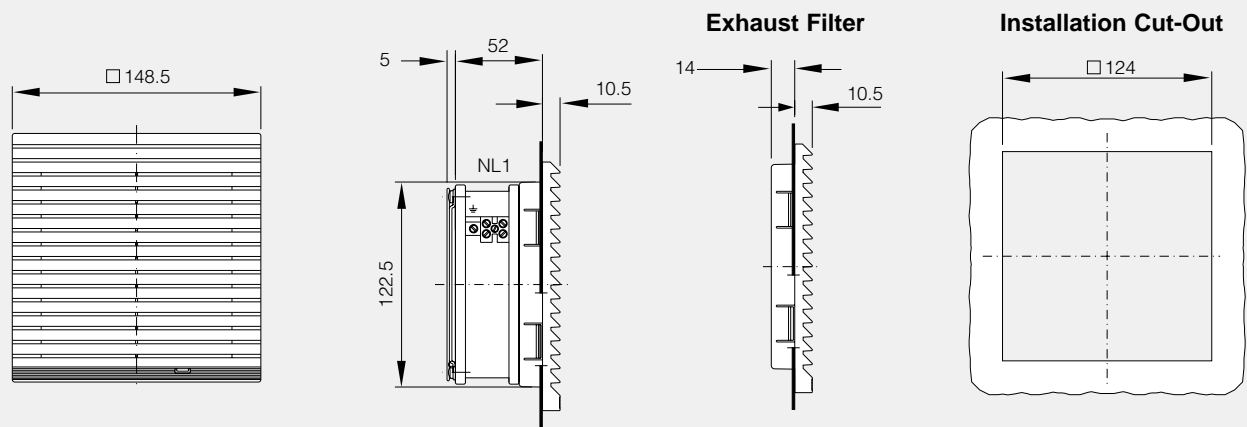
**Technical Specifications**

**1S Filter Fans**

**3321xxx**



**3322xxx**



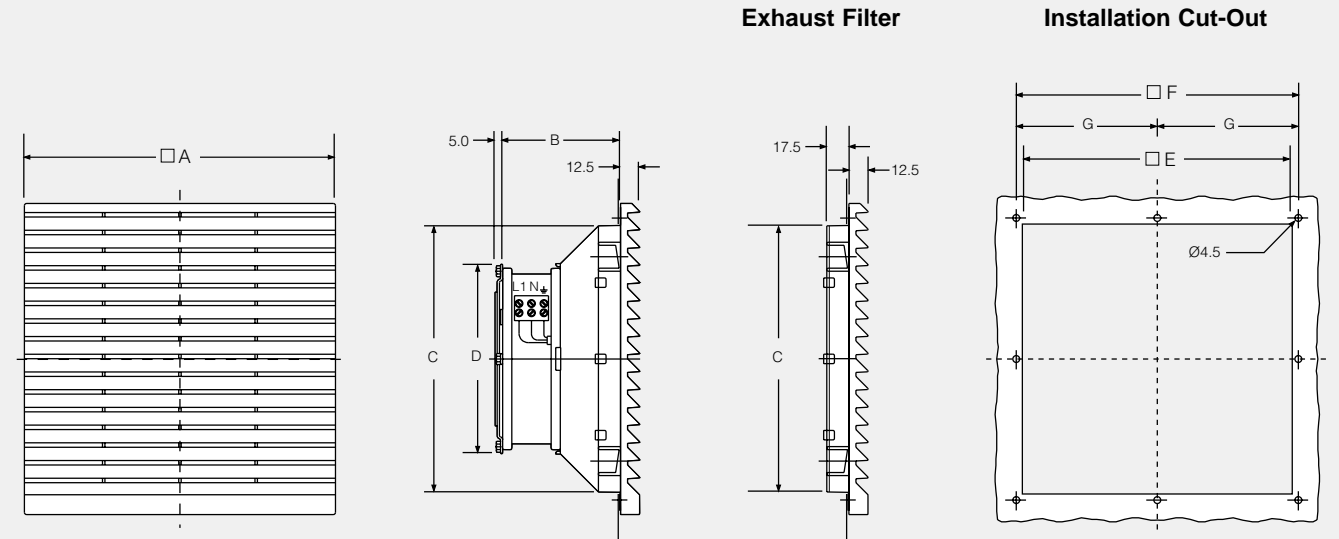
1S Filter Fans				
Part No.	3321100	3321115/3321117	3322100/3322107	3322115/3322117
Rated voltage Volt/Hz	230/50/60	115/50/60	230/50/60	115/50/60
<b>Air Displacement at 60 Hz</b> (unimpeded air flow)	<b>15 cfm/25 m³/h</b>		<b>40 cfm/66 m³/h</b>	
Air displacement at 60 Hz	1 SK 3321200: 9 cfm/18 m³/h    1 x 3322200		30 cfm/50 m³/h 1 x 3323200	33 cfm/55 m³/h
Axial fan with	Self-starting shaded pole motor			
Rated current	69.0 mA	136.0 mA	0.11 A	0.23 A
Power consumption	12.5 W	12.5 W	18 W	18 W
Type of connection	24" lead		Terminal block	
Temperature range	+14°F to +131°F/-10°C to +55°C			
Noise level	41/46 dBA		46/50 dBA	
Protection rating per EN 60 529/10.91	IP 43 when using standard filters.			

Specifications subject to change.  
Dimensions in millimeters (mm) unless otherwise indicated.

**Technical Specifications**

**1S Filter Fans**

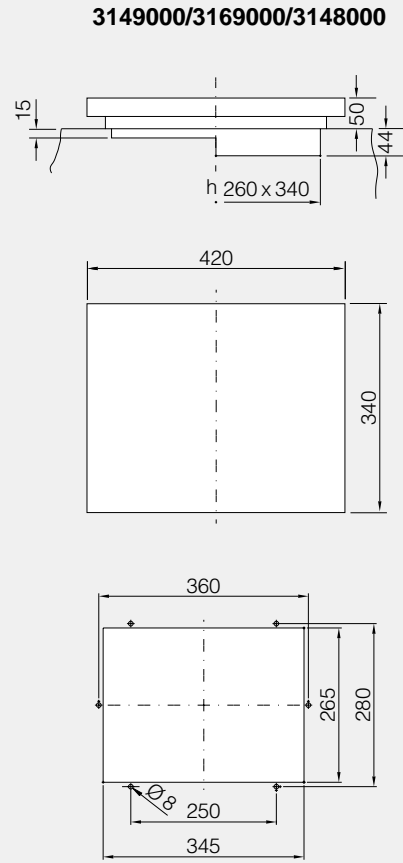
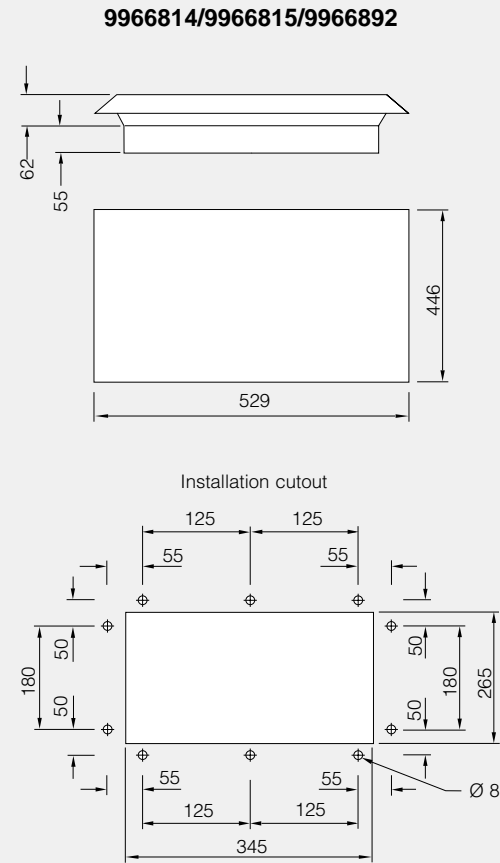
**3323xxx/3325xxx/3326xxx/3327xxx**



1S Filter Fans (Continued)									
Part No.	3323100/ 3323107	3323115/ 3323117	3325100/ 3325107	3325115/ 3325117	3326100/ 3326107	3326115/ 3326117	3327100	3327115	9964980
Rated voltage Volt/Hz	230/50/60	115/50/60	230/50/60	115/50/60	230/50/60	115/50/60	230/50/60	115/50/60	115/50/60
<b>Air Displacement at 60 Hz</b> (unimpeded air flow)	<b>70 cfm/120 m³/h</b>		<b>155 cfm/265 m³/h</b>		<b>330 cfm/560 m³/h</b>		<b>425 cfm/720 m³/h</b>		<b>680 cfm</b>
Air displacement at 60 Hz	1 x SK 3323200 <b>50 cfm/82 m³/h</b> 2 x SK 3323200 <b>60 cfm/98 m³/h</b> 1 x SK 3325200 <b>55 cfm/90 m³/h</b>		1 x SK 3325200 <b>112 cfm/190 m³/h</b> 2 x SK 3325200 <b>127 cfm/220 m³/h</b> 1 x SK 3326200 <b>125 cfm/215 m³/h</b>		1 x SK 3326200 <b>230 cfm/390 m³/h</b> 2 x SK 3326200 <b>290 cfm/495 m³/h</b>		1 SK 3326200 <b>335 cfm/575 m³/h</b>		1 SK 3326200 <b>350 cfm/594 m³/h</b>
Fan motor	Self-starting shaded pole motor						Permanent split capacitor motor		
Rated current	0.12 A 0.11 A	0.24 A 0.23 A	0.28 A 0.24 A	0.53 A 0.49 A	0.29 A 0.35 A	0.58 A 0.70 A	0.65 A	1.5 A	1.5 A
Power consumption	19 W/18 W	19 W/18 W	41 W/38 W	41 W/38 W	64 W/80 W	64 W/80 W	155 W	167 W	175 W
Type of connection	Terminal block								
Temperature range	+14°F to +131°F/-10°C to +55°C								
Noise level	46/49 dBA		54/56 dBA		56/61 dBA		75/76 dBA		73 dBA
Protection rating per EN 60 529/10.91	IP 43/ NEMA 12/IP 54 when a sealing frame and fine filter is used.								IP 43/ NEMA 12
<b>Part No. exhaust filters</b>	<b>3323200</b>		<b>3325200</b>		<b>3326200</b>		<b>3326200</b>		
A (mm)	204		255		323		323		
B (mm)	77.5		100		124		145		
C (mm)	176		222		290		290		
D (mm)	120		150		225		280		
E (mm)	177		224		292		292		
F (mm)	185		234		302		302		
G (mm)	(92.5)		(117)		(151)		(151)		

Specifications subject to change.  
Dimensions in millimeters (mm) unless otherwise indicated.

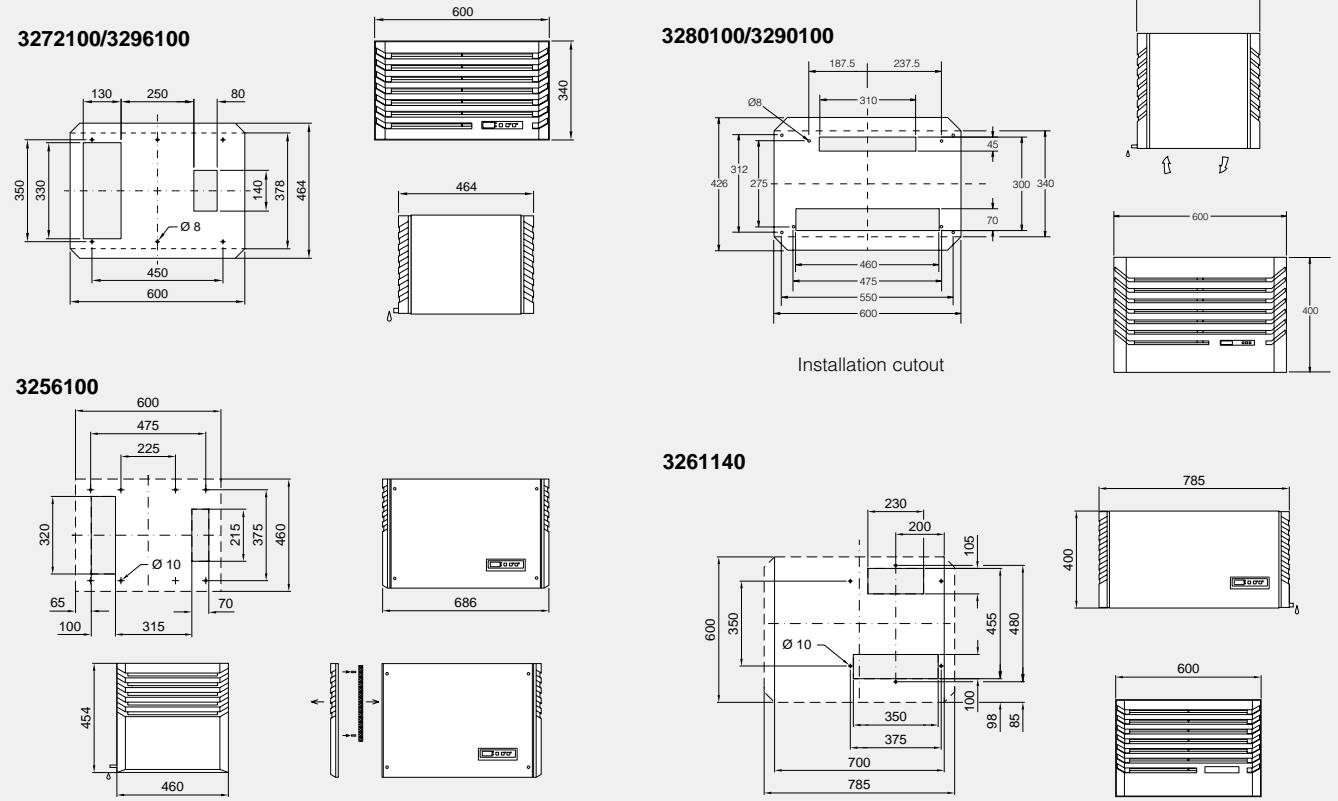
**Technical Specifications**  
Pagoda Roof Fans



Pagoda Fans						
Part No.	9966814	9966815	9966892 (vent only)	3148000 (vent only)	3149000	3169000
Rated operating voltage Volt/Hz	115/50/60	230/50/60	-	-	230/50/60	115/50/60
<b>Air Displacement at 60Hz</b>	<b>360 cfm</b>		-	-	<b>210 cfm</b>	
Rated current maximum	0.72 A	0.36 A	-	-	0.2 A	0.55 A
Power consumption	82 W	-	-	42 W	65 W	-
Temperature range	14°F to 140°F/-10°C to +60°C		-	-	14°F to 140°F/-10°C to +60°C	
Type of connection	10" cord/no plug		-	-	-	
Noise Level	59 dBa	-	-	53 dBa	-	-
rpm	3400 min <sup>-1</sup>	-	-	1400 min <sup>-1</sup>	-	-
Weight	20 lbs/9.1 kg	-	10 lbs/4.5 kg	8.8 lbs/4 kg	17.5 lbs/7.8 kg	-
Color	RAL 7032 pebble grey	-	RAL 7032, textured	-	-	RAL 7032, textured
Protective category	NEMA 3R/IP 55		-	-	IP 43	

Specifications subject to change.

**Technical Specifications**  
Roofmount Air Conditioners



Roofmount Air Conditioners							
Part No.		3272100	3296100	3280100	3290100	3256100	3261140
Rated voltage	Volt/Hz	115/50/60	230/50/60	115/50/60	230/50/60	230/50/60	460/60-3~
Dimensions in	H	13.39"/340 mm		15.75"/400 mm		18"/454 mm	16"/400 mm
	W	23.62"/600 mm		23.62"/600 mm		24"/600 mm	28"/700 mm
	D (without grille)	14.88"/378 mm		13.39"/340 mm		18"/460 mm	24"/600 mm
<b>Useful cooling capacity per DIN 3168</b>	<b>L35 L35</b> (95°F internal/95°F ambient)	<b>2750/2950 BTU/ 800/860 W</b>		<b>4800 BTU/ 1400 W</b>		<b>7000/7030 BTU/ 2050/2060 W</b>	<b>9550 BTU/ 2800 W</b>
	<b>L35 L50</b> (95°F internal/122°F ambient)	<b>2100/2350 BTU/ 615/685 W</b>		<b>3625/4175 BTU/ 1060/1220 W</b>		<b>5085 BTU/ 1490 W</b>	<b>8020 BTU/ 2350 W</b>
	Maximum rated current	6.3 A/6.6 A	3.2 A/3.9 A	10.5 A/12.8 A	5.3 A/6.0 A	8.9 A/9.8 A	2.8 A
	Starting current	18.2 A/20.7 A	11.4 A/11.0 A	24.6 A/28.7 A	16.6 A/15.5 A	24.7 A/22.5 A	14.0 A
Pre-fuse T	10.0 A/10.0 A	6.0 A/6.0 A	16.0 A/16.0 A	6.0 A/10 A	10.0 A/10.0 A	6.0 A	
Power consumption	L35 L35	345 W/450 W	330 W/430 W	740 W/825 W	710 W/800 W	1480 W/1480 W	1350 W
	L35 L50	415 W/545 W	390 W/525 W		840 W/920 W	1590 W	1600 W
Refrigerant	R134 a	25 oz/750 g		33.5 oz/950 g		35 oz/980 g	29 oz/825 g
Maximum pressure		363 psi/25 bar		335 psi/23 bar		348 psi/24 bar	348 psi/24 bar
Temperature range		+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C	
Noise level		62 dBa		62 dBa		62 dBa	65 dBa
Protection rating	External circuit	NEMA 2/IP 34		NEMA 2/IP 34		NEMA 2/IP 24	
	per EN 60 529/10.91 Internal circuit	NEMA 12/13/IP 54		NEMA 12/13/IP 54		NEMA 12/IP 54	
Duty cycle		100%		100%		100%	
Type of connection		Terminal block		Terminal block		Terminal block	
Weight		90 lbs/41 kg	84 lbs/38 kg	110 lbs/50 kg	97 lbs/44 kg	119 lbs/54 kg	171 lbs/78 kg
Air displacement of fans (unimpeded air flow)							
External circuit		535/615 cfm / 910 m³/h/1045 m³/h		2 x 535/555 cfm/910/940 m³/h		421 cfm/720 m³/h	618 cfm/1050 m³/h
Internal circuit		100/110 cfm / 171 m³/h/185 m³/h		129/131 cfm/220/222 m³/h		222 cfm/380 m³/h	412 cfm/700 m³/h
Temperature control		Thermostat		Thermostat		Thermostat	
	Setting range	+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C	
	Factory setting	+95°F/+35°C		+95°F/+35°C		+95°F/+35°C	

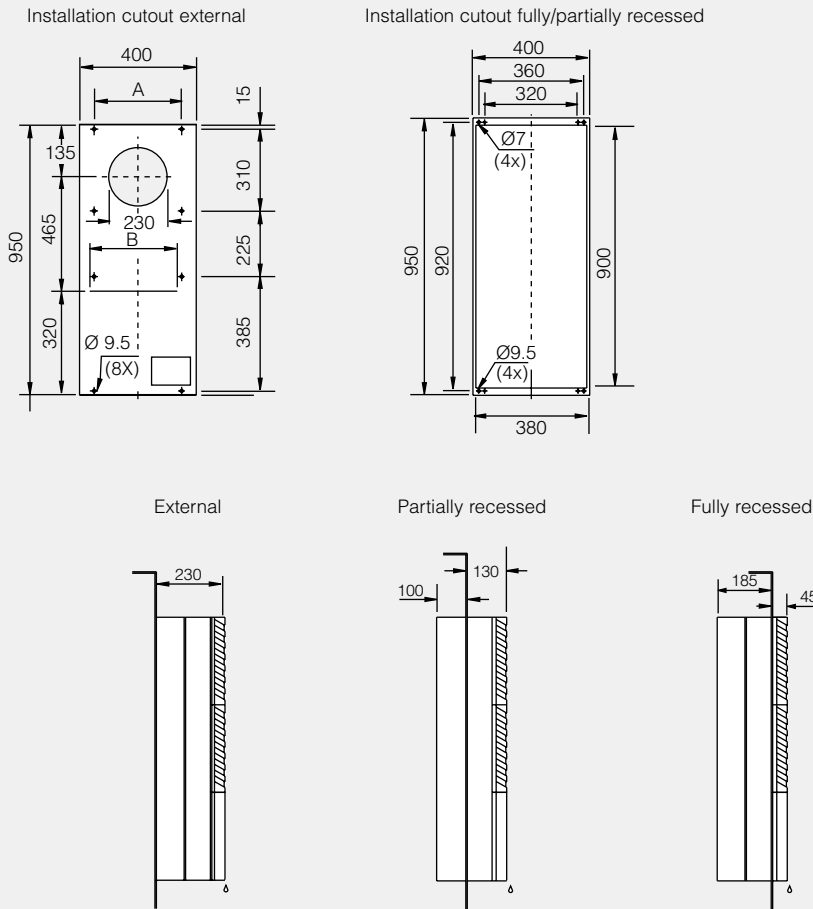
Specifications subject to change.

Dimensions in millimeters (mm) unless otherwise indicated.



**Technical Specifications**  
Wallmount Air Conditioners

3281100/3293100

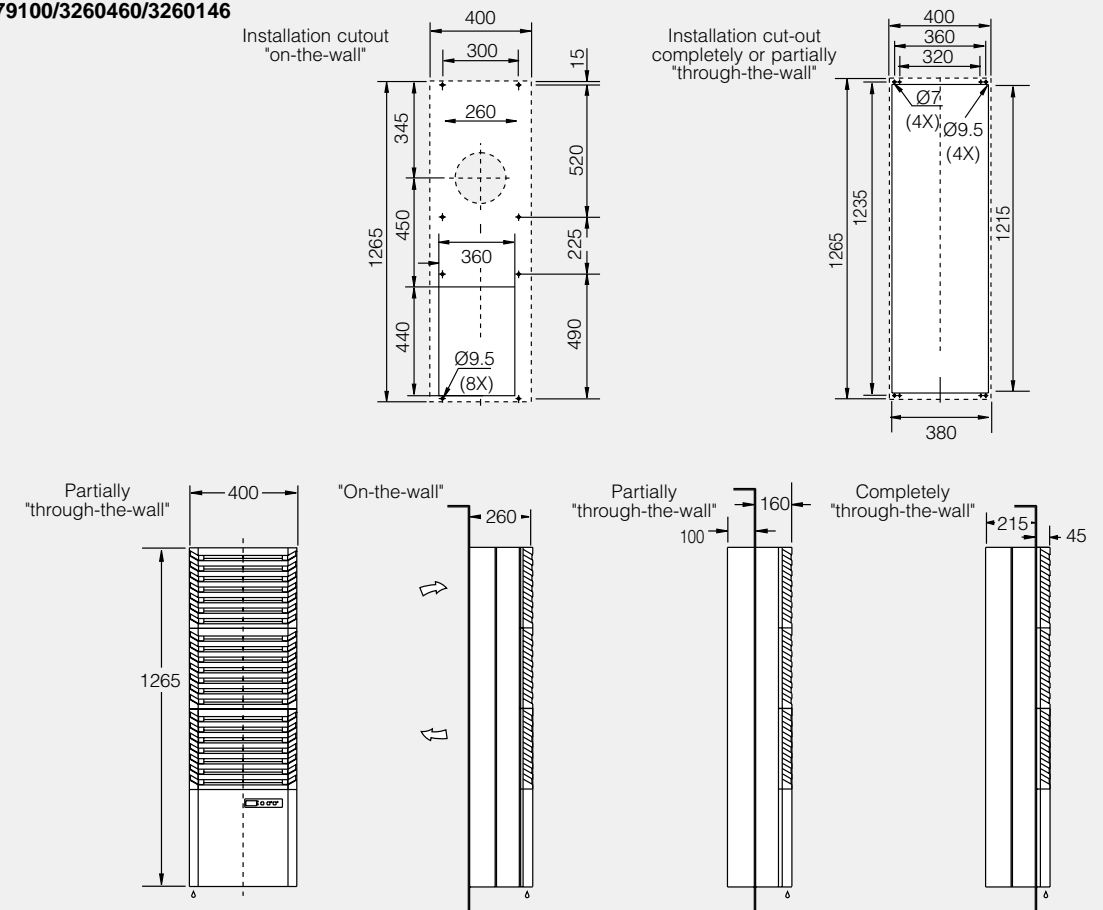


Wallmount Air Conditioners			
Part No.		3293100	3281100
Rated voltage	Volt/Hz	230/50/60	115/50/60
Dimensions in inches/mm (with grille)	H	37.40"/950 mm	37.40"/950 mm
	W	15.75"/400 mm	15.75"/400 mm
	D	9.06"/230 mm	9.06"/230 mm
Useful cooling capacity per DIN 3168	L35 L35 (95°F internal/95°F ambient)	2800/3300 BTU/ 825/960 W	2800/3300 BTU/ 825/960 W
		L35 L50 (95°F internal/122°F ambient)	2325/2525 BTU/ 680/740 W
	Maximum rated current	3.0 A/3.6 A	6.5 A/7.6 A
	Starting current	8.5 A/10.0 A	16.4 A/20.1 A
Pre-fuse T	6.0 A/6.0 A	10.0 A/10.0 A	
Power consumption	L35 L35	450 W/595 W	470 W/600 W
	L35 L50	500 W/670 W	530 W/680 W
Refrigerant	R134a	18.5 oz/525 g	
Maximum pressure		363 psi/25 bar	
Temperature range		+68°F to +131°F/+20°C to +55°C	
Noise level		62 dBa	
Protection rating per EN 60 529/10.91		External circuit NEMA 2/IP 34/internal circuit NEMA 12/13/IP 54/NEMA 4/4x cover available	
Duty cycle		100%	
Type of connection		Terminal block	Terminal block
Weight		88 lbs/40 kg	95 lbs/43 kg
Air displacement of fans (unimpeded air flow)			
External circuit		351 cfm/600 m³/h	
Internal circuit		146 cfm/250 m³/h	
Temperature control		Built-in thermostat	
	Setting range	+68°F to +131°F/+20°C to +55°C	
	Factory setting	+95°F/+35°C	

Specifications subject to change.  
Dimensions in millimeters (mm) unless otherwise indicated.

**Technical Specifications**  
Wallmount Air Conditioners

3298100/3279100/3260460/3260146

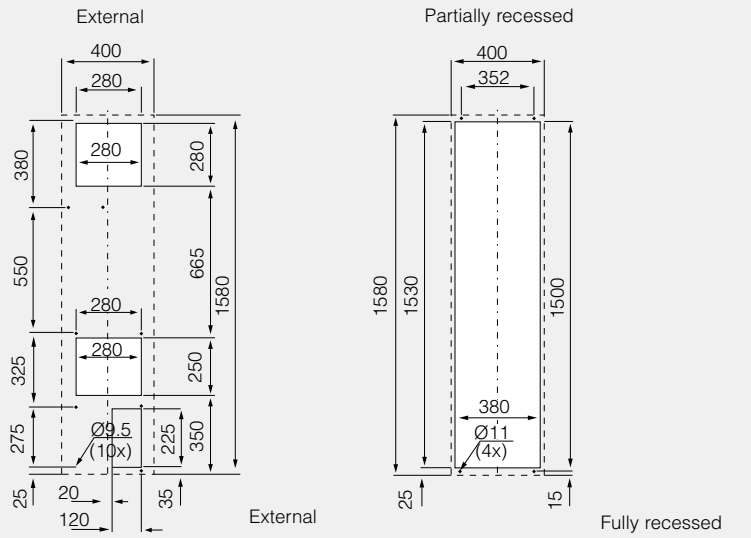
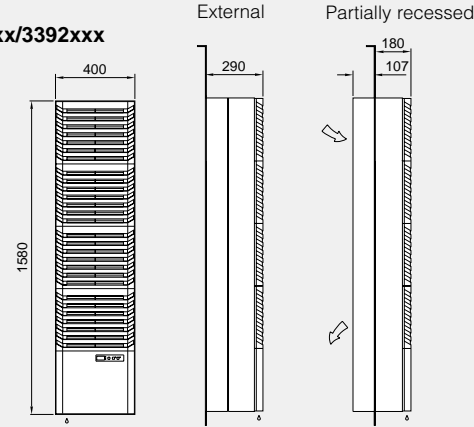


Wallmount Air Conditioners						
Part No.		3298100	3279100	3260460	3260146	
Rated voltage	Volt/Hz	230/50/60	115/50/60	460-3~		
Dimensions in inches/mm (with grille)	H	49.80"/1265 mm	49.80"/1265 mm	50"/1265 mm		
	W	15.75"/400 mm	15.75"/400 mm	16"/400 mm		
	D	10.24"/260 mm	10.24"/260 mm	10"/260 mm		
Useful cooling capacity (95°F internal/95°F ambient) per DIN 3168	L35 L35	4775/4950 BTU/1400/1450 W	4775/4950 BTU/1400/1450 W	5940/5560 BTU		
	L35 L50	3750/3925 BTU/1100/1150 W	3750/3925 BTU/1100/1150 W	4575/4160 BTU		
Maximum rated current		5.5 A/5.7 A	11.5 A/12 A	2.1 A/2.0 A		
Starting current		17.5 A/16.5 A	36.0 A/37.0 A	8.6 A		
Pre-fuse T		10.0 A/10.0 A	16 A/16 A	6.0 A		
Power consumption	L35 L35	830 W/1040 W	850 W/1080 W	900 W/750 W		
	L35 L50	940 W/1170 W	975 W/1265 W	1060 W/920 W		
Refrigerant	R134a	19.0 oz/525 g		19.4 oz/550 g		
Maximum pressure		363psi/25 bar		348 psi/24 bar		
Temperature range		+68°F to +131°F/+20°C to +55°C				
Noise level		62 dBa	62 dBa	65 dBa		
Protection rating per EN 60 529/10.91		External circuit NEMA 2/IP34/internal circuit NEMA 12/13 IP54/NEMA 4/4x cover available				
Duty cycle		100%				
Type of connection		Terminal block	Terminal block	Terminal block		
Weight		119 lbs/54 kg	126 lbs/57 kg	132 lbs/60 kg		
Air displacement of fans (unimpeded air flow)						
External circuit		410/310 cfm/685/510 m³/h	410/310 cfm/685/510 m³/h	257 cfm/440 m³/h		
Internal circuit		520/620 cfm/860/1030 m³/h	520/620 cfm/860/1030 m³/h	170 cfm/290 m³/h		
Temperature control		Built-in thermostat			Microcontroller	Thermostat
	Setting range	+68°F to +131°F/+20°C to +55°C				
	Factory setting	+95°F/+35°C				

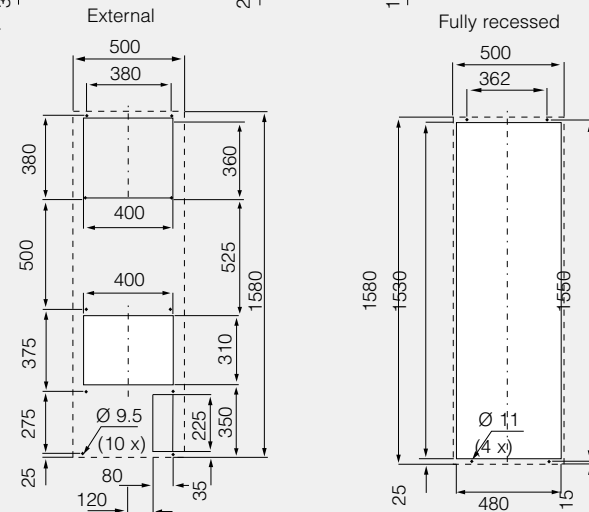
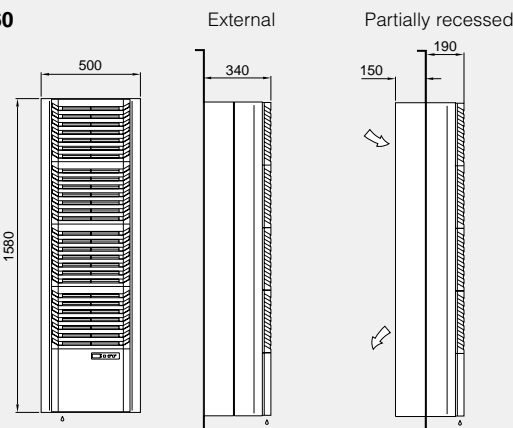
Specifications subject to change.  
Dimensions in millimeters (mm) unless otherwise indicated.

**Technical Specifications**  
**Wallmount Air Conditioners**

**3390xxx/3392xxx**



**3391560**

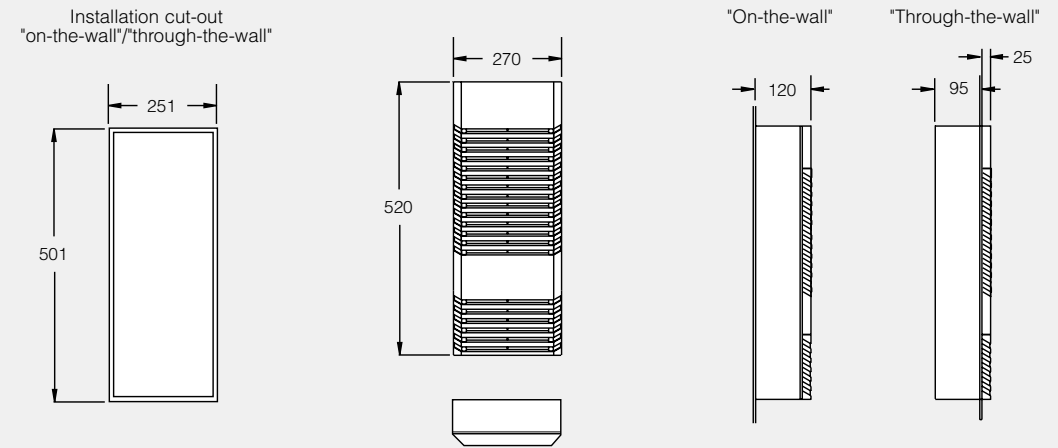


Wallmount Air Conditioners							
Part No.	3390100	3390115	3390146	3392100	3392115	3392146	3391560
Rated voltage	230/50/60		460/60-3~	230/50/60		460/60-3~	460/60-3~
Dimensions in inches/mm (with grille)	H 62"/1580 mm W 16"/400 mm D 12"/290 mm		H 62"/1580 mm W 16"/400 mm D 12"/290 mm	H 62"/1580 mm W 16"/400 mm D 12"/290 mm		H 62"/1580 mm W 16"/400 mm D 12"/290 mm	H 62"/1580 mm W 20"/500 mm D 13.5"/340 mm
<b>Useful cooling capacity (95°F internal/95°F ambient) per DIN 3168</b>	<b>L35 L35 6895/7575 BTU</b>		<b>L35 L50 4980/5390 BTU</b>	<b>8800/9965 BTU</b>		<b>13800/15940 BTU</b>	<b>10240/12115 BTU</b>
Maximum rated current	6.9 A/8.9 A		13.8 A/17.8 A	8.2 A/10.0 A		16.4 A/20.0 A	4.5 A/5.3 A
Starting current	24.0 A/23.0 A		48.0 A/46.0 A	25.0 A/24.0 A		50.0 A/48.0 A	15.5 A/17.0 A
Pre-fuse T	10.0 A/10.0 A		20.0 A/20.0 A	10.0 A/16.0 A		20.0 A/24.0 A	10 A/10 A
Power consumption	L35 L35	1160 W/1460 W	1180 W/1490 W	870 W/1120 W	1400 W/1800 W	1430 W/1840 W	1600 W/2030 W
	L35 L50	1310 W/1620 W	1330 W/1650 W	1060 W/1340 W	1620 W/2080 W	1650 W/2130 W	1900 W/2420 W
Refrigerant	R134a		36 oz/1025 g	41 oz/1175 g		62 oz/1750 g	
Maximum pressure	406 psi/28 bar		406 psi/28 bar		406 psi/28 bar		406 psi/28 bar
Temperature range	+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C
Noise level	66 dBA		67 dBA		65 dBA		65 dBA
Protection rating per EN 60 529/10.91	External circuit NEMA 2/IP 34/internal circuit NEMA 12/IP 54/NEMA 3R cover available						
Duty cycle	100%						
Type of connection	terminal block						
Weight	146 lbs/66 kg	154 lbs/70 kg	152 lbs/69 kg	152 lbs/69 kg	161 lbs/73 kg	161 lbs/73 kg	187 lbs/85 kg
Air displacement of fans (unimpeded air flow)							
External circuit	374 cfm/640 m³/h		415 cfm/710 m³/h		643 cfm/1100 m³/h		643 cfm/1100 m³/h
Internal circuit	320 cfm/550 m³/h		374 cfm/640 m³/h		497 cfm/850 m³/h		497 cfm/850 m³/h
Temperature control	Thermostat		Thermostat		Microcontroller		Microcontroller
Setting range	+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C		+68°F to +131°F/+20°C to +55°C
Factory setting	+95°F/+35°C		+95°F/+35°C		+95°F/+35°C		+95°F/+35°C

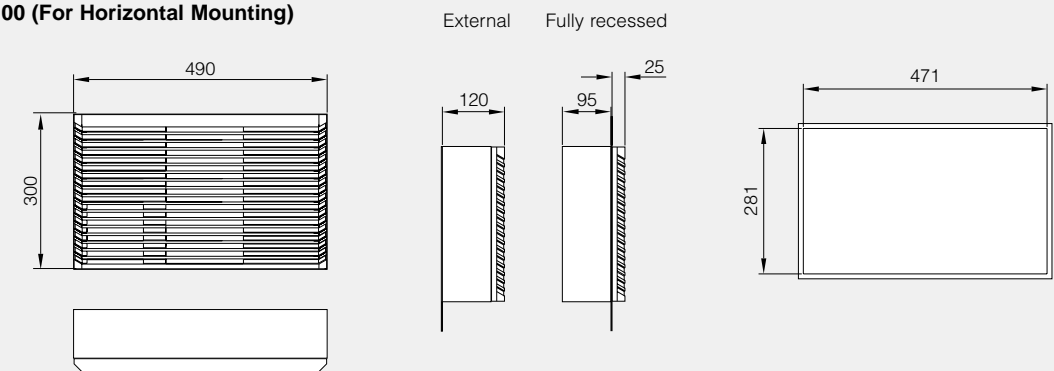
Specifications subject to change.  
Dimensions in millimeters (mm) unless otherwise indicated.

**Technical Specifications**  
**Micro Air Conditioners**

**3203100/3205100 (For Vertical Mounting)**



**3206100/3204100 (For Horizontal Mounting)**



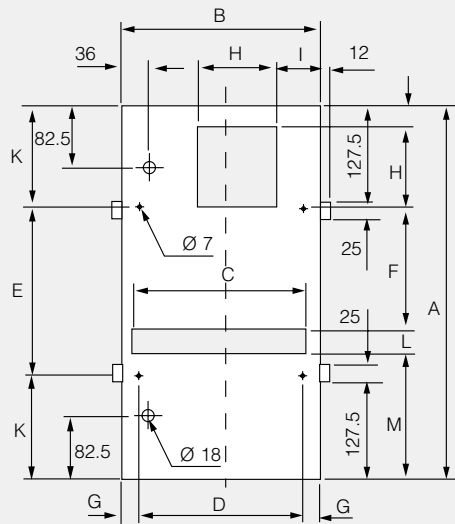
Micro Air Conditioners				
Part No.	3203100	3205100	3206100	3204100
Rated voltage	230/50/60		115/50/60	
Dimensions in inches/mm (with grille)	H 20.47"/520 mm W 10.63"/270 mm D 5.0"/120 mm		H 12"/300 mm W 20"/490 mm D 5"/120 mm	
<b>Useful cooling capacity (95°F internal/95°F ambient) per DIN 3168 (95°F internal/122°F ambient)</b>	<b>L35 L35 1195/1230 BTU/350 W</b> <b>L35 L50 715/680 BTU/200 W</b>		<b>1195/1230 BTU/350 W</b> <b>545/580 BTU</b> <b>1100/1175 BTU</b> <b>545/580 BTU</b>	
Maximum rated current	1.8 A/1.6 A		3.5 A/3.8 A	
Starting current	2.7 A/2.8 A		4.2 A/4.5 A	
Pre-fuse T	4 A		6 A	
Power consumption (per DIN 3168)	L35 L35	275 W/280 W	275 W/280 W	285 W/290 W
	L35 L50	315 W/315 W	315 W/315 W	295 W/305 W
Refrigerant	R134 a		4.5 oz/125 g	
Temperature range	+68°F to +122°F/+20°C to +50°C			
Noise level	62 dBA			
Protection rating per EN 60 529/10.91	External circuit NEMA 2/IP34/internal circuit NEMA 12/IP 54			
Duty cycle	100%			
Type of connection	Terminal block	Terminal block	Terminal block	Terminal block
Weight	29 lbs/13 kg	35 lbs/16 kg	35 lbs/16 kg	29 lbs/13 kg
Air displacement				
External circuit	73/86 cfm/142/167 m³/h		83/98 cfm/142/167 m³/h	
Internal circuit	41/48 cfm/80/93 m³/h		47/54 cfm/80/93 m³/h	
Temperature control	Electronic			
Setting range	+68°F to +122°F/+20°C to +50°C (factory setting +95°F/+35°C)			
Overtemperature alarm	Via built-in microcontroller			
Potential free contact:	I <sub>max</sub> = 5 A, U <sub>max</sub> = 230 V			

Specifications subjects to change.  
Dimensions in millimeters (mm) unless otherwise indicated.





**Technical Specifications**  
Air/Air Heat Exchangers

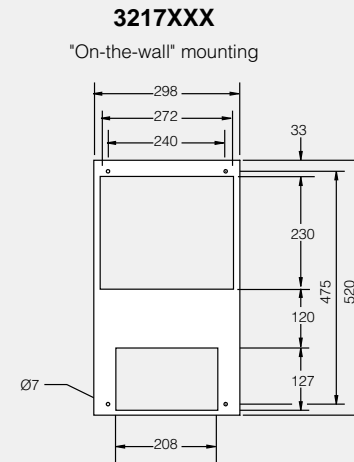


**3131XXX/3133XXX/3134XXX**  
Installation cutout  
"external mount"

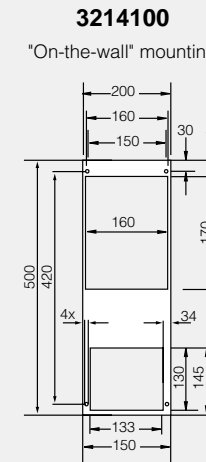
Air/Air Heat Exchangers				
Part No.	115/50/60	3131110	3133110	3134110
Part No.	230/50/60	3131000	3133000	3134000
Dimensions in inches/mm	H	47.24"/1200 mm	58"/1480 mm	70.08"/1780 mm
	W	10.67"/271 mm	18"/439 mm	17.28"/439 mm
	D	4.33"/110 mm	4.5"/110 mm	4.33"/110 mm
Specific thermal capacity		<b>42.0 W/C</b>	<b>63.0 W/C</b>	<b>69.0 W/C</b>
Air displacement of fans (unimpeded air flow)				
External circuit		350 cfm/600 m <sup>3</sup> /h	335 cfm/570 m <sup>3</sup> /h	350 cfm/600 m <sup>3</sup> /h
Internal circuit		350 cfm/600 m <sup>3</sup> /h	335 cfm/570 m <sup>3</sup> /h	350 cfm/600 m <sup>3</sup> /h
Noise level		62 dBa	68 dBa	61 dBa
Fans per heat exchanger		2	2	2
Temperature range		+23°F to +131°F/-5°C to +55°C		
Weight		20.5 lbs/9.3 kg	27.5 lbs/12.5 kg	41.6 lbs/18.9 kg
Electrical specifications per fan				
Rated current per fan	(230 V)	0.36 A/0.45 A		0.36 A/0.45 A
Power capacity per fan		82/103 W		82/103 W
Cooling surface		2.46 m <sup>2</sup>	5.44 m <sup>2</sup>	7.00 m <sup>2</sup>
Protection rating (internal circuit)		NEMA 12/IP 54 per EN 60 529/10.91		
Power cord		2 x 5 m		2 x 5 m
A (mm)		1200.00	1480.00	1780.00
B (mm)		271.00	439.00	439.00
C (mm)		239.00	407.00	407.00
D (mm)		220.00	388.00	388.00
E (mm)		880.00	1160.00	1460.00
F (mm)		716.50	996.50	1296.50
G (mm)		25.50	25.50	25.50
H (mm)		160.00	160.00	160.00
I (mm)		40.00	40.00	40.00
J (mm)		30.00	30.00	30.00
K (mm)		160.00	160.00	160.00
L (mm)		62.00	62.00	62.00
M (mm)		231.50	231.50	231.50

Specifications subject to change.  
Dimensions in millimeters (mm) unless otherwise indicated.

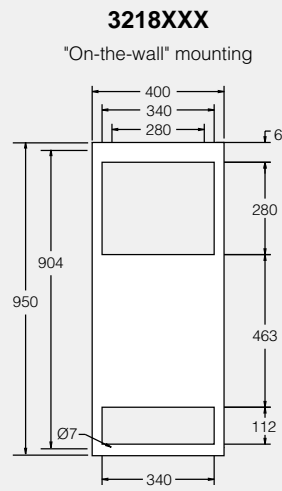
**Technical Specifications**  
Air/Water Heat Exchangers



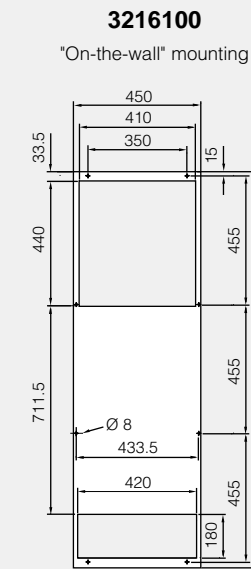
**3217XXX**  
"On-the-wall" mounting



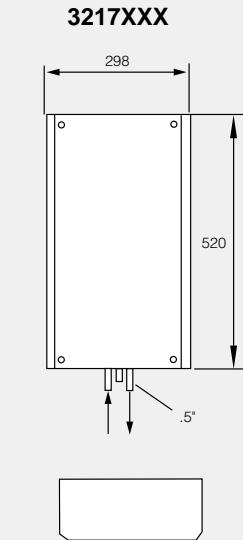
**3214100**  
"On-the-wall" mounting



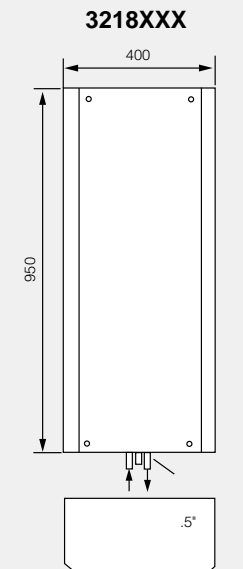
**3218XXX**  
"On-the-wall" mounting



**3216100**  
"On-the-wall" mounting



**3217XXX**



**3218XXX**

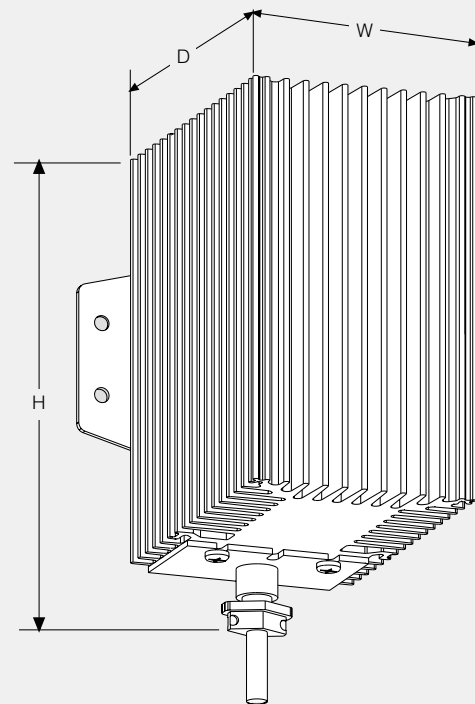
Air/Water Heat Exchangers							
Part No.		3214100	3217100	3217115	3218100	3218115	3216100
Rated voltage	Volt/Hz	230/50/60	230/50/60	115/50/60	230/50/60	115/50/60	230/50/60
Dimensions in inches/mm	H	19.7"/500 mm	20.47"/520 mm		37.40"/950 mm		55.5"/1400 mm
	W	7.9"/200 mm	11.73"/298 mm		15.75"/400 mm		18"/450 mm
	D	3.7"/100 mm	5.31"/135 mm		7.87"/200 mm		10"/250 mm
Useful cooling output (95°F internal/50°F water)	L35 W 10, 200 l/h	<b>2050 BTU/680 W</b>	<b>3400 BTU/1000 W</b>	<b>3750 BTU/1100 W</b>	<b>10250 BTU/3000 W</b>	<b>11950 BTU/3500 W</b>	<b>17050 BTU/5000 W</b>
	L35 W 10, 400 l/h	<b>3400 BTU/1000 W</b>	<b>3750 BTU/1100 W</b>				<b>17050 BTU/5000 W</b>
Maximum rated current		0.17/0.18 A	0.6/0.5 A	1.1 A	0.42 A/0.48 A	1.0 A	0.9/1.3 A
Pre-fuse T		2.0 A	4.0 A		4.0 A		4.0 A
Refrigerant		water (pH-neutral)					
Water entry temperature		+35°F to +86°F/+1°C to +30°C					
Operating pressure		15 to 145 psi/1 to 10 bar					
Ambient temperature range		+34°F to +158°F/+1°C to +70°C					
Noise level		58 dBa					
Protection rating per EN 60 529/10.91		NEMA 4/IP 65*					
Type of connection		Terminal block					
Weight		15 lbs/6.8 kg	26.5 lbs/ 12 kg		46.3 lbs/21 kg		123 lbs/56 kg
Air displacement		-	140 cfm/240 m <sup>3</sup> /h		260 cfm/450 m <sup>3</sup> /h		-
Temperature control		Thermostat	Setting range +68°F to +140°F/ +20°C to +60°C				
Temperature monitoring		Built-in thermostat with change-over contact, 16 A capacity					

\* When heat exchanger/cabinet interface is sealed. Specifications subject to change.  
Dimensions in millimeters (mm) unless otherwise indicated.

**Technical Specifications**

**Enclosure Heaters**

3106000/3115000/3116000/3107000/3102xxx



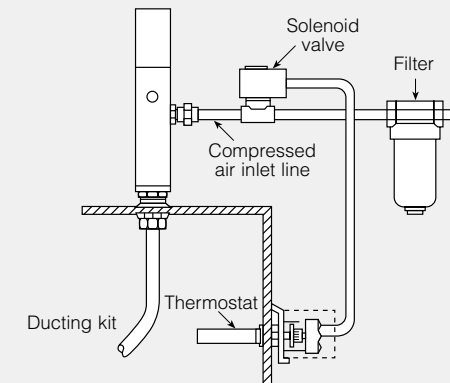
Enclosure Heaters									
Part No.		3106000	3115000	3116000	3107000	3102000 includes fan	3102110 includes fan	9967053 includes fan	9967054 includes fan
Dimensions in mm	H	125	110	185	140	168		145	145
	W	45	64	64	80	120		145	145
	D	35	54	54	118	145		102	102
Rated voltage	Volt/Hz	110 V-240 V AC				230 V	115 V	115 V	230 V
Continuous heat output at $T_u = 20^\circ\text{C}$		10 W	30 W	50 W	130 W	300 W	300 W	1000 W	1000 W
Pre-fuse T		2.0 A	4.0 A	4.0 A	4.0 A	4.0 A	4.0 A	12.0 A	6.0 A
Type of connection		1'/0.3 m cord				Terminal block			

Specifications subject to change.  
Dimensions in millimeters (mm) unless otherwise indicated.

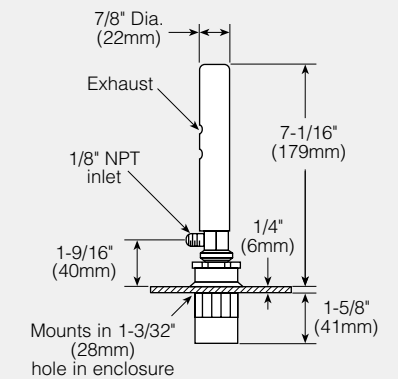
**Technical Specifications**

**Vortex Kooler Enclosure Coolers**

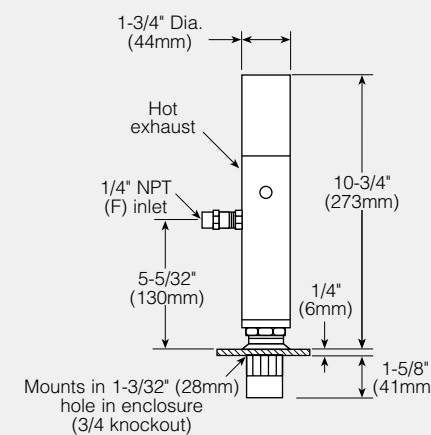
**NEMA 12 Vortex Kooler System**



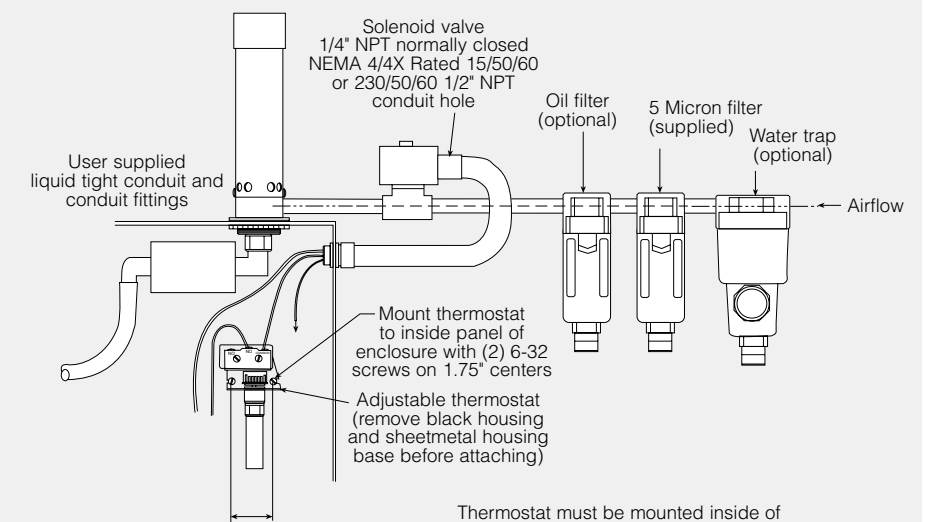
**400 BTU Vortex Koolers**



**NEMA 12 900-2500 BTU Vortex Koolers**

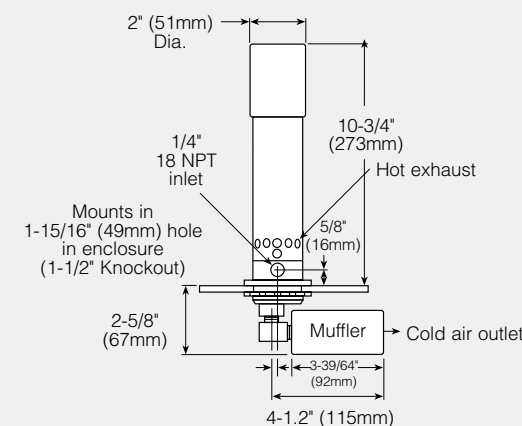


**NEMA 4/4X Vortex Kooler System**

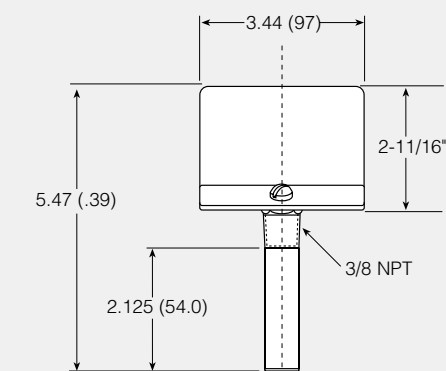


Thermostat must be mounted inside of NEMA 4 or 4X enclosure to maintain NEMA rating of Vortex Kooler system

**NEMA 4/4X Vortex Koolers**



**Thermostat mounts in 11/16" hole in enclosure (mounts inside enclosure for NEMA 4/4X applications)**





## NETWORKING SOLUTIONS

QuickRack ValuePack Enclosures .....	pgs NET 1-2
QuickRack PowerPack Enclosures .....	pgs NET 3-4
BasicRacks .....	pgs NET 5-6
QuickBox Enclosures.....	pgs NET 7-8
Technical Drawings .....	pgs NET 9-11



NETWORKING SOLUTIONS





# QuickRack ValuePack Enclosures



## Value-Packed Network Cabinets

Rittal offers a variety of QuickRack cabinets in the most popular configurations for the networking market. Heights range from 24 to 47U and include a choice of widths and depths. These standard cabinets come packed full of features that make the cabinet an easy to work with solution for many network applications. For quick availability, easy transportation and innovative design, look no further than the QuickRack ValuePack.

### Configuration

- Front safety glass viewing door with lock insert
- Vented rear steel door with lock insert
- Full height 19" DK rails, front and rear
- Two sets of horizontal rail supports
- Leveling feet
- Available with or without sidewalls
- 50 captive nuts
- 100 mounting screws

### Technical Specifications

#### Material:

- Enclosure/door: carbon steel

#### Finish/color:

- Flat parts: E-coat primed, powder painted, RAL 7035 light grey
- Vertical posts: E-coat primed, powder painted, RAL 7030 stone grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page .....NET 9

ValuePack Enclosure								
Part No. QR with sidewalls	Part No. QR without sidewalls	U	Dimensions					
			(Approx.) inches			mm		
			H	W	D	H	W	D
9967140	7503770	24	48	24	24	1200	600	600
9967139	7503773	24	48	32	32	1200	800	800
9967138	7503778	42	78	24	24	2000	600	600
9967137	7503779	42	78	24	32	2000	600	800
9967135	7503781	42	78	32	32	2000	800	800
9967134	7503782	47	86	24	24	2200	600	600
9967133	7503783	47	86	24	32	2200	600	800
9967131	7503785	47	86	32	32	2200	800	800

\* Note: multiple cabinets can be bayed together using Part No. 7526565. Remember to order one cabinet with sidewalls per row of cabinets and the rest without.

Accessories					
Part No. QR with sidewalls	Part No. QR without sidewalls	19" rackmount shelf*	Cable base	Cable collecting rails	
				Across width	Across depth
				9967140	7503770
9967139	7503773	7145035	7526320	7526935	7526945
9967138	7503778	7144035	7526300	7526930	7526940
9967137	7503779	7145035	7526310	7526930	7526945
9967135	7503781	7145035	7526320	7526935	7526945
9967134	7503782	7144035	7526300	7526930	7526940
9967133	7503783	7145035	7526310	7526930	7526945
9967131	7503785	7145035	7526320	7526935	7526945

\* Fixed shelves that mount to horizontal rail supports also available. Cabinets come standard with DK style rails.

# QuickRack PowerPack Enclosures



## Get The Rittal Power

For a more advanced network cabinet offering, get the QuickRack PowerPack. The PowerPack offering combines the value-packed QuickRack cabinet with two exciting features: an eight outlet power strip and a fan tray for air movement within the cabinet. Add to that the advantages of the cabinet itself—cost-efficiency, accessibility and easy transition of applications—and you'll get the power from QuickRack.

### Configuration

- Front safety glass viewing door with lock insert
- Vented rear steel door with lock insert
- Full height 19" DK rails, front and rear
- Two sets of horizontal rail supports
- Roof with fan tray (two fans on 24" W, three fans on 32" W), 9' cord/plug
- 8 outlet, 15 amp power outlet strip
- Leveling feet
- Available with or without sidewalls
- 50 captive nuts
- 100 mounting screws

### Technical Specifications

#### Material:

- *Enclosure/door:* carbon steel

#### Finish/color:

- *Flat parts:* E-coat primed, powder painted, RAL 7035 light grey
- *Vertical posts:* E-coat primed, powder painted, RAL 7030 stone grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

Page .....NET 10

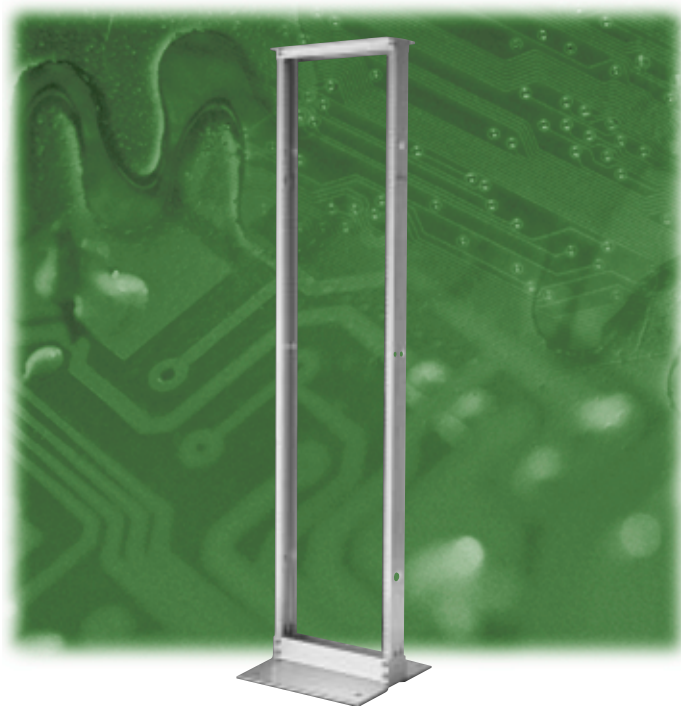
PowerPack Enclosure								
Part No. QR with sidewalls	Part No. QR without sidewalls	U	Dimensions					
			(Approx.) inches			mm		
			H	W	D	H	W	D
9966977	9966978	24	48	24	24	1200	600	600
9966979	9966980	24	48	32	32	1200	800	800
9966971	9966972	42	78	24	24	2000	600	600
9966973	9966974	42	78	24	32	2000	600	800
9966975	9966976	42	78	32	32	2000	800	800
9966967	9966968	47	86	24	32	2200	600	800
9966969	9966970	47	86	32	32	2200	800	800

Note: multiple cabinets can be bayed together using Part No. 7526965. Remember to order one cabinet with sidewalls per row of cabinets and the rest without.

Accessories					
Part No. QR with sidewalls	Part No. QR without sidewalls	19" rackmount shelf*	Cable base	Cable collecting rails	
				Across width	Across width
				9966977	9966978
9966979	9966980	7145035	7526310	7526930	7526945
9966971	9966972	7144035	7526300	7526930	7526940
9966973	9966974	7145035	7526310	7526930	7526945
9966975	9966976	7145035	7526320	7526935	7526945
9966967	9966968	7145035	7526310	7526930	7526945
9966969	9966970	7145035	7526320	7526935	7526945

\* Fixed shelves that mount to horizontal rail supports also available. Cabinets come standard with DK style rails.

# BasicRacks



## 19" Open Rack Solutions

Rittal's 19" BasicRack is the perfect solution for standard equipment applications and basic 19" component installations. This rack is bolted to the floor for greater stability, either standing alone or interconnected for larger projects. Because of the simple design of this Rittal rack, users will benefit with easy access to equipment as well as quick assembly and installation. If you are looking for a complete, low-cost but high-quality basic equipment management system, Rittal's BasicRack is the ideal solution.

### Configuration

- Knock down in one package
- All hardware for installation
- 2 aluminum extrusions
- 5/8" - 5/8" x 1/2" hole pattern
- 12-24 tapped screw holes
- Available in clear chemical coat and black paint

### Technical Specifications

**Material:**

- Aluminum

**Finish/color:**

- Clear chemical coated grey
- Black paint

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

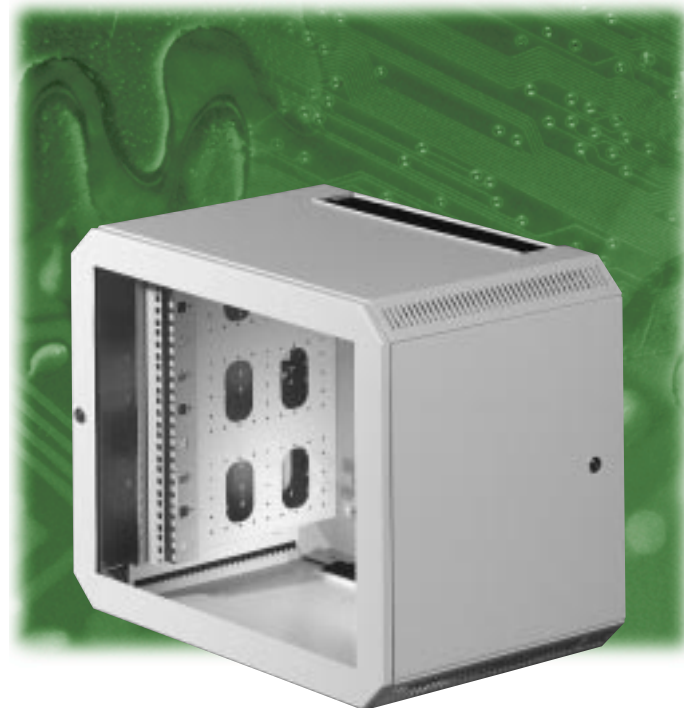
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Rack								
Part No.	U	Exact dimensions						Color
		inches			mm			
		H	W	D	H	W	D	
9967637	24	48	20	15	1200	500	375	Black
9967638	24	48	20	15	1200	500	375	Clear
9967635	45	84	20	15	2122	500	375	Black
9967636	45	84	20	15	2122	500	375	Clear

Accessories								
Part No.	Rack storage drawer	Double divider shelf	Adjustable monitor shelf	Divider shelf	3' vertical cable management	7' vertical cable management	Sliding extension shelf	19" keyboard w/mouse pad
9967637	9967641	9967643	9967645	9967639	9967653	-	9967647	9967649
9967638	9967642	9967644	9967646	9967640	9967654	-	9967648	9967650
9967635	9967641	9967643	9967645	9967639	9967653	9967651	9967647	9967649
9967636	9967642	9967644	9967646	9967640	9967654	9967652	9967648	9967650

# QuickBox Enclosures



## Versatile Wallmount Solutions

Rittal's new QuickBox wallmount enclosures combine variety with flexibility and cost efficiency. With its depth-adjustable 19" mounting surface, the QuickBox is the ideal solution for packaging network equipment or floor distributors. One enclosure, 12 models - that means 12 standard products instead of complicated custom fabrication. Choose from a large selection of sizes, with or without viewing door, that offer cost-efficient, customer-oriented solutions for the most diverse applications.

The QuickBox is available off-the-shelf, completely assembled. In every respect the QuickBox is the optimum combination of the proven quality and flexibility of Rittal enclosures.

### Configuration

- Wallmount section with 19" rails and brush inserts
- Housing cover with base
- Cover with vent slots and brush inserts
- Sheet steel or viewing door options
- Security locks on front door and two sides
- Cable collecting combination rail
- Front 19" rails, infinitely depth adjustable

### Technical Specifications

#### Material:

- *Wallmount section with mounting angles:* 14 ga/2.0 mm sheet steel
- *Housing cover:* 19 ga/1.0 mm sheet steel
- *Door:* sheet steel or viewing door with sheet steel frame and security glass insert

#### Finish/color:

- Powder painted, RAL 7035 light grey

### Protection Ratings

**NEMA Type**  1  4  4X  12  13

### Certifications/Approvals

**Listings**  UL  CUL  CSA  TÜV

### Technical Drawings

**Page** .....NET 11

Enclosure								
Part No.	U	SU	Exact dimensions					
			inches			mm		
			H	W	D	H	W	D
<b>24" Wide x 24" Deep With Viewing Door</b>								
7502016	6	10	14.25	23.62	23.62	362	600	600
7502026	9	15	19.49	23.62	23.62	495	600	600
7502036	12	20	24.75	23.62	23.62	628	600	600
7502046	15	26	30.00	23.62	23.62	762	600	600
7502056	18	31	35.24	23.62	23.62	895	600	600
7502066	21	36	40.47	23.62	23.62	1028	600	600
<b>24" Wide x 24" Deep With Solid Door</b>								
7502116	6	10	14.25	23.62	23.62	362	600	600
7502126	9	15	19.49	23.62	23.62	495	600	600
7502136	12	20	24.75	23.62	23.62	628	600	600
7502146	15	26	30.00	23.62	23.62	762	600	600
7502156	18	31	35.24	23.62	23.62	895	600	600
7502166	21	36	40.47	23.62	23.62	1028	600	600

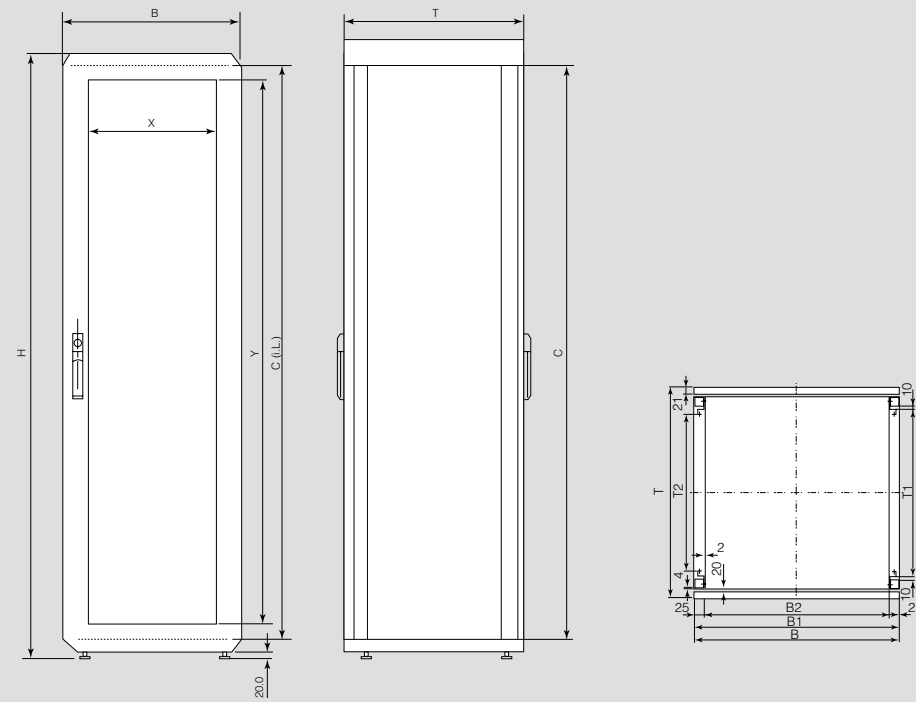
Accessories								
Part No.	19" rails	Cable collecting rails (depth)	Cable collecting rails (width)	2U shelf	Fixed shelf*	Telescopic slides*	Shelf 20" deep*	Telescopic slides 20" deep
<b>24" Wide x 24" Deep With Viewing Door</b>								
7502016	7502201	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502026	7502202	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502036	7502203	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502046	7502204	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502056	7502205	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502066	7502206	7502302	7502304	7119400	7144035	7061000	7145035	7081000
<b>24" Wide x 24" Deep With Solid Door</b>								
7502116	7502201	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502126	7502202	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502136	7502203	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502146	7502204	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502156	7502205	7502302	7502304	7119400	7144035	7061000	7145035	7081000
7502166	7502206	7502302	7502304	7119400	7144035	7061000	7145035	7081000

\* Need second set of 19" rails for rear cabinet.



### Technical Specifications

#### QuickRack ValuePack Enclosures

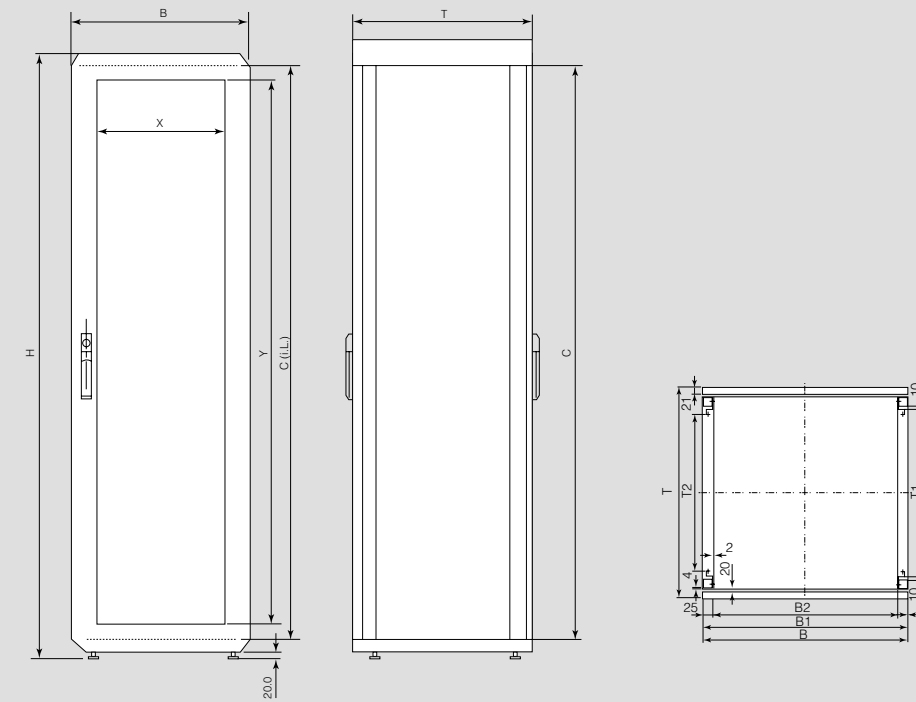


Enclosure							
Part No. QR with sidewalls	Part No. QR without sidewalls	Cabinet dimensions			Inside cabinet dimension C mm	Width of glass door X mm	Height of glass door Y mm
		Height mm H	Width mm B	Depth mm T			
9967140	7503770	1200	600	600	1100	425	1000
9967139	7503773	1200	800	800	1100	625	1000
9967138	7503778	2000	600	600	1900	425	1800
9967137	7503779	2000	600	800	1900	425	1800
9967135	7503781	2000	800	800	1900	625	1800
9967134	7503782	2200	600	600	2100	425	2000
9967133	7503783	2200	600	800	2100	425	2000
9967131	7503785	2200	800	800	2100	625	2000

Roof Dimensions						
Width x depth	Outside width inches B	Width without sidewalls inches B1	Width inside frame uprights inches B2	Outside depth inches T	Inside frame posts inches T1	Inside frame roll form inches T2
23.62" x 23.62"	23.62	23.46	21.50	18.90	17.22	17.72
23.62" x 31.50"	23.62	23.46	21.50	31.50	26.80	25.60
31.50" x 23.62"	31.50	31.30	29.40	23.62	18.90	17.72
31.50" x 31.50"	31.50	31.30	29.40	31.50	26.80	25.60

### Technical Specifications

#### QuickRack PowerPack Enclosures

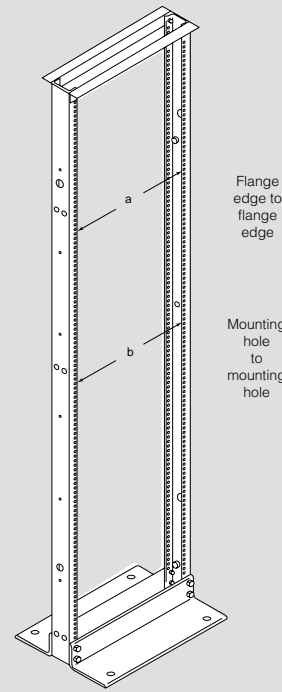


Enclosure							
Part No. QR with sidewalls	Part No. QR without sidewalls	Cabinet dimensions			Inside cabinet dimension C mm	Width of glass door X mm	Height of glass door Y mm
		Height mm H	Width mm B	Depth mm T			
9966977	9966978	1200	600	600	1100	425	1000
9966979	9966980	1200	800	800	1100	625	1000
9966971	9966972	2000	600	600	1900	425	1800
9966973	9966974	2000	600	800	1900	425	1800
9966975	9966976	2000	800	800	1900	625	1800
9966967	9966968	2200	600	800	2100	425	2000
9966969	9966970	2200	800	800	2100	625	2000

Roof Dimensions						
Width x depth	Outside width inches B	Width without sidewalls inches B1	Width inside frame uprights inches B2	Outside depth inches T	Inside frame posts inches T1	Inside frame roll form inches T2
23.62" x 23.62"	23.62	23.46	21.50	18.90	17.22	17.72
23.62" x 31.50"	23.62	23.46	21.50	31.50	26.80	25.60
31.50" x 23.62"	31.50	31.30	29.40	23.62	18.90	17.72
31.50" x 31.50"	31.50	31.30	29.40	31.50	26.80	25.60

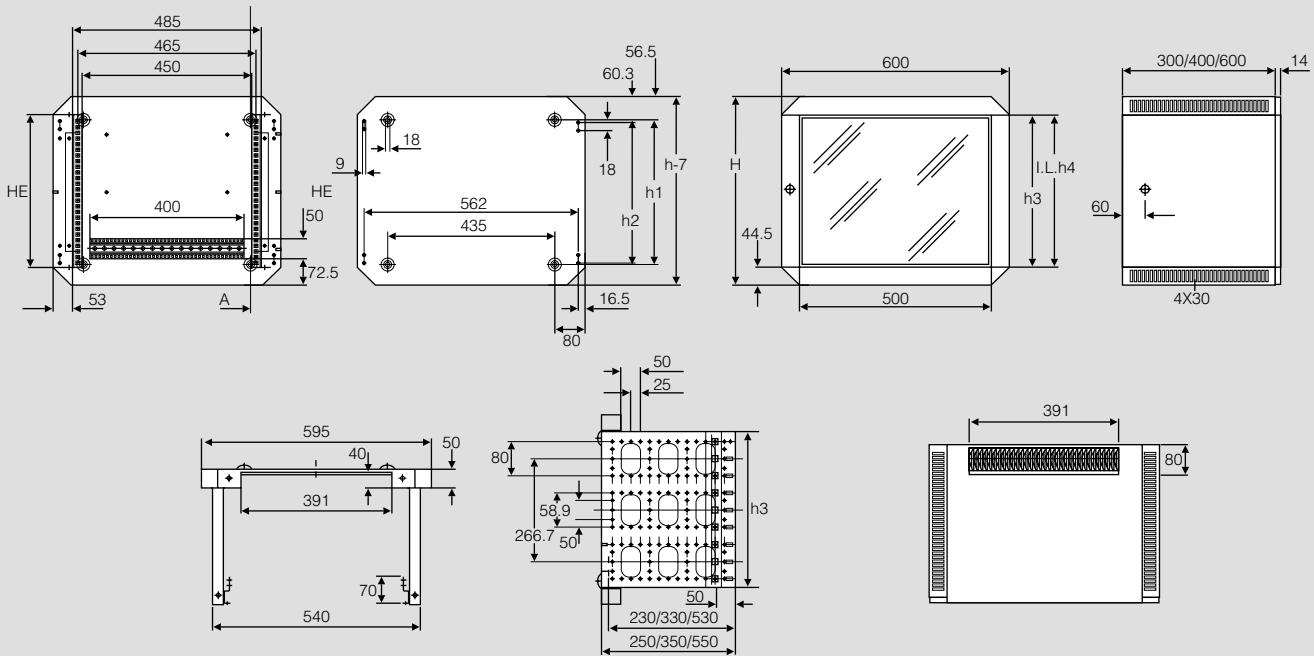
## Technical Specifications

### BasicRacks



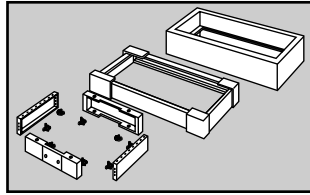
Rack					
Part No.	Dimensions (inches)			a	b
	H	W	D		
9967637	48	20	15	17.75	18.31
9967638	48	20	15	17.75	18.31
9967635	84	20	15	17.75	18.31
9967636	84	20	15	17.75	18.31

### QuickBox Enclosures



Enclosure										
Part No. QB with viewing door	Part No. QB with solid door	U	SU	Height	Width	Depth	h1	h2	h3	h4
7502016	7502116	6	10	14.25"/362 mm	23.62"/600 mm	23.62"/600 mm	9.53"/242 mm	9.21"/234 mm	10.51"/267 mm	10.75"/273 mm
7502026	7502126	9	15	19.49"/495 mm	23.62"/600 mm	23.62"/600 mm	14.76"/375 mm	14.45"/367 mm	15.75"/400 mm	15.98"/406 mm
7502036	7502136	12	20	24.75"/628 mm	23.62"/600 mm	23.62"/600 mm	20.00"/508 mm	19.72"/501 mm	21.02"/534 mm	21.26"/540 mm
7502046	7502146	15	26	30.00"/762 mm	23.62"/600 mm	23.62"/600 mm	25.28"/642 mm	24.96"/634 mm	26.26"/667 mm	26.50"/673 mm
7502056	7502156	18	31	35.24"/895 mm	23.62"/600 mm	23.62"/600 mm	30.51"/775 mm	30.20"/767 mm	31.50"/800 mm	31.73"/806 mm
7502066	7502166	21	36	40.47"/1028 mm	23.62"/600 mm	23.62"/600 mm	35.75"/908 mm	35.47"/901 mm	36.77"/934 mm	37.00"/940 mm

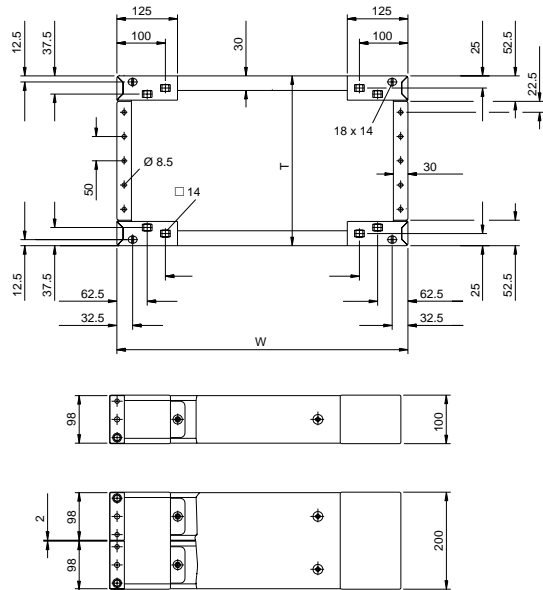
# Bases And Accessories



## Plinths And Cable Bases For AE Enclosures

## Plinths And Cable Bases For AK Enclosures

## Plinths And Cable Bases For PS Enclosures



T = enclosure depth - 50 mm  
W = enclosure width

## Plinths And Cable Bases For AP Enclosures

## Plinths And Cable Bases For PC Enclosures

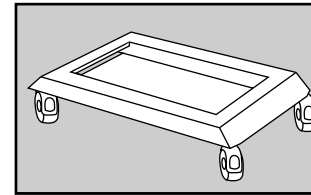
Plinths And Cable Bases For AE Enclosures				
For enclosures WxD		Packs of	Part No.	
inches	mm		4" plinth	8" base
24x12	600x300	1	2816200	2826200
31x12	800x300	1	2818200	2828200
39x12	1000x300	1	2801200	2802200

Plinths And Cable Bases For AK Enclosures				
For enclosures WxD		Packs of	Part No.	
inches	mm		4" plinth	8" base
24x16	600x400	1	2911200	2912200
31x16	800x400	1	2901200	2902200
47x16	1200x400	1	2921200	2922200

Plinths And Cable Bases For PS Enclosures				
For enclosures WxD		Packs of	Part No.	
inches	mm		4" plinth	8" base
24x16	600x400	1	2804200	2805200
24x20	600x500	1	2807200	2808200
24x24	600x600	1	2813200	2814200
24x31	600x800	1	2846200	2847200
31x16	800x400	1	2823200	-
31x20	800x500	1	2829200	2830200
31x24	800x600	1	2833200	2834200
31x31	800x800	1	2848200	2849200
39x16	1000x400	1	2909200	2910200
39x20	1000x500	1	2914200	2915200
39x24	1000x600	1	2916200	-
47x16	1200x400	1	2836200	2837200
47x20	1200x500	1	2839200	2840200
47x24	1200x600	1	2844200	2845200
47x31	1200x800	1	2853200	-

Plinths And Cable Bases For AP Enclosures				
For enclosures WxD		Packs of	Part No.	
inches	mm		4" plinth	8" base
24x16	600x400	1	2911200	2912200
24x20	600x500	1	2807200	2808200
31x16	800x400	1	2901200	2902200
31x20	800x500	1	2841200	2842200
39x16	1000x400	1	2891200	2892200
47x16	1200x400	1	2921200	2922200
47x20	1200x500	1	2851200	2852200
63x16	1600x400	1	2961200	2962200
63x20	1600x500	1	2863200	2864200

Plinths And Cable Bases For PC Enclosures				
For enclosure WxD		Packs of	Part No.	
inches	mm		4" base	8" base
24x24	600x600	1	2813200	2814200
24x31	600x800	1	2846200	-

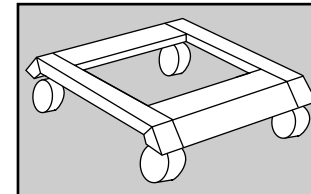
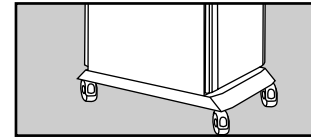


## Mobile Base On Casters For PC Enclosures

With integral C-rail for cable clamping at the rear. Removable component shelf as cable storage space.

Load capacity per caster:  
265 lbs/120 kg static load  
Overall height: 7.09"/180 mm

**Color:**  
Powder coated in RAL 7035  
*Panels:* RAL 5018  
*Casters:* RAL 9005



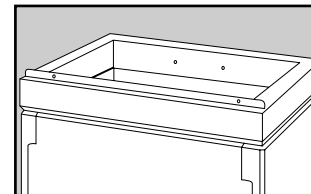
## Mobile Base

Combines high functionality with modern design.

- Enclosure can easily be moved
- High floor clearance
- High load capacity. 120 kg/265 lbs static load per caster.

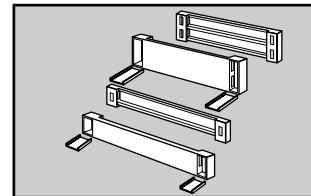
**Configuration:** base with 4 casters, including two with brake.

**Color:** Base: RAL 7032/7033 grey  
Casters: RAL 9005 black.



## Concrete Base/Plinth For CS Enclosures

A special concrete base/plinth is available for every CS outdoor enclosure (with standard dimensions). Height approx. 1000 mm. The excavation depth is approximately 700 mm. The base/plinth is made from pre-cast concrete sections which are easily fitted on-site.



## Base/Plinth Width Components For TS Enclosures

Base/plinth components consisting of two trim panels with two pre-configured corner pieces. In 8"/200 mm high base/plinth components, the rear trim panel is in two parts.

**Configuration:** 1 pack of 2 base/plinth components (for front and rear), 4 covers, including screws for enclosure fastening.

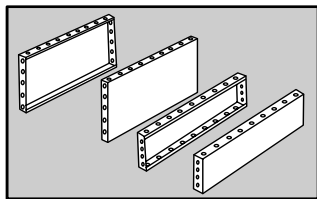
Mobile Base		
For PC enclosure	Enclosure depth inches/mm	Part No.
PC 4603703, PC 4603704 PC 4603913, PC 4603920	25.6/650	4640600
PC 4609703, PC 4609920	33.5/850	4640800

**Configuration:**  
1 base with component shelf, with twin casters supplied loose, 2 with, 2 without brakes.

Mobile Base			
For enclosure WxD		Packs of	Part No.
inches	mm		
24x24	600x600	1	2981200
24x31	600x800	1	2982200

Concrete Base/Plinth For CS Enclosures	
For enclosure dimensions W x D mm	Part No.
600 x 500	9765082
800 x 500	9765084
600 x 400	9765182
800 x 400	9765088
1200 x 400	9765089

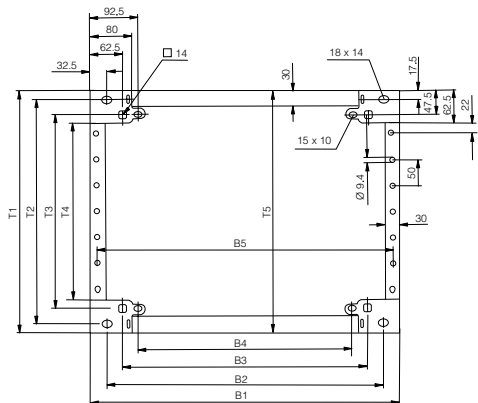
Base/Plinth Width Components For TS Enclosures				
For enclosure width		Packs of sets	Part No.	
inches	mm		4" high	8" high
16	400	1	8601400	8602400
24	600	1	8601600	8602600
32	800	1	8601800	8602800
40	1000	1	8601000	8602000
48	1200	1	8601200	8602200



### Base/Plinth Depth Components For TS Enclosures

For mounting between the base/plinth width components. With 8"/200 mm height, two 4"/100 mm base/plinth trims may also be used. Base/plinth trim (4"/100 mm high) may be installed rotated through 90° in order to stabilize bayed base/plinth components.

**Material:** sheet steel  
**Color:** RAL 7022



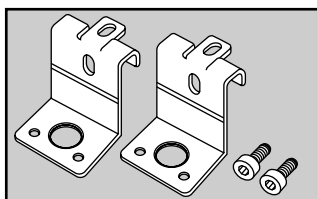
#### Description of the hole patterns

**B1/T1** = External dimension

**B2/T2** = For screw-fixing in the thread of the enclosure corner piece from below

**B3/T3** = For screw-fixing with captive nuts to the enclosure base from below or above

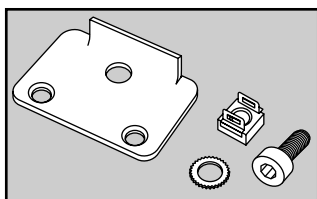
All holes (B2-B4/T2-T4) may be used for screw-fixing to the base.



### Base Fixing Bracket For TS Enclosures

For anchoring the enclosure at any position of the base frame, particularly in cases where the existing holes in the frame or base tray cannot be used due to installed equipment or because the substructure prevents them from being used.

**Material:** sheet steel, zinc-plated, chromated.



### Base/Plinth Adaptor For Levelling Feet And Twin Casters For TS/PS Enclosures

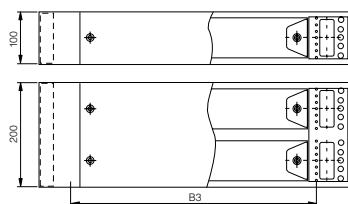
Connection component for the attachment of:

- Levelling feet PS 4612.000
- Casters PS 4611.000
- Casters CP 6148.000
- Casters PC 4634.000 to the plinth

**Material:** sheet steel, zinc-plated, chromated.

Base/Plinth Depth Components For TS Enclosures				
For enclosure depth		Packs of sets	Part No.	
inches	mm		4" high	8" high
16	400	1	<b>8601040</b>	<b>8602040</b>
20	500	1	<b>8601050</b>	<b>8602050</b>
24	600	1	<b>8601060</b>	<b>8602060</b>
32	800	1	<b>8601080</b>	<b>8602080</b>

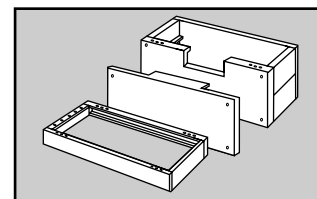
**Configuration:** 1 pack of 2 base/plinth trim panels, including material for fixing on the base/plinth components.



Base/Plinth Components Front/Rear						Base/Plinth Trim, Side					
Width mm	B1	B2	B3	B4	B5	Depth mm	T1	T2	T3	T4	T5
400	400	335	275	215	370	400	369	334	274	244	368
-	-	-	-	-	-	500	469	434	374	344	468
600	600	535	475	415	570	600	569	534	474	444	568
800	800	735	675	615	770	800	769	734	674	644	768
1000	1000	935	875	815	970	-	-	-	-	-	-
1200	1200	1135	1075	1015	1170	-	-	-	-	-	-

Base Fixing Bracket For TS Enclosures	
Packs of	Part No.
4	<b>8800210</b>

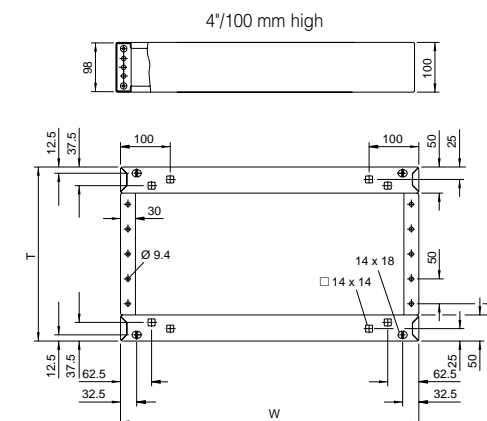
Base/Plinth Adaptor For Levelling Feet And Twin Casters	
Packs of	Part No.
4	<b>8800220</b>



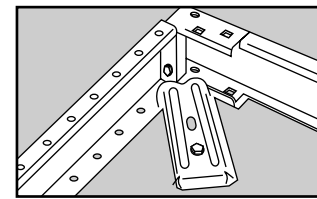
### Stainless Steel Plinths And Bases For AP/PS Enclosures

**Material:** Type 304 stainless steel.

Stainless Steel Plinths And Bases For AP/PS Enclosures			
For enclosure WxD		Packs of	Part No.
inches	mm		4" plinth
32x24	800x600	1	<b>2856000</b>



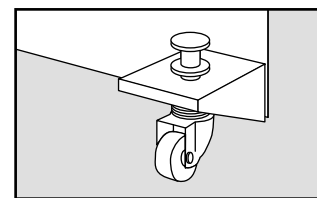
T = enclosure depth - 50 mm  
W = enclosure width



### Floor Clamp For PS Enclosures

8 ga/4 mm galvanized sheet steel, chromated.

Floor Clamp For PS Enclosures		
	Packs of	Part No.
Floor clamp	10	<b>2817000</b>

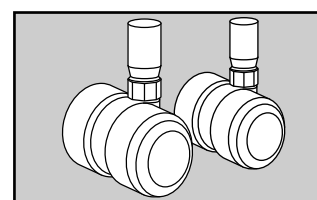


### Wheel Casters

Use only on installed plinths or cable bases.

**Configuration:** 1 set includes 4 casters. Also available with foot brake: 2 casters with and 2 casters without brakes per set.

Wheel Casters			
For enclosure	Brake	Packs of	Part No.
AE, AK, PC	yes	1 set	<b>4570000</b>



### Castors

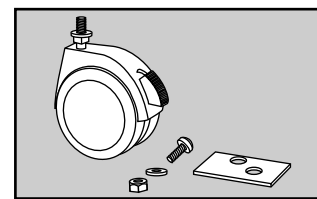
Help simple movement on even floors. Easy to install.

For:

- PS 4000 enclosures
- PC enclosures
- CP 6137.035 - CP 6137.535 pedestal

Load capacity/caster: 88 lbs/40 kg.

Castors	
Packs of	Part No.
4	<b>4611000</b>



### Twin Casters

To fit:

- PS 4000 Perfect System enclosures
- PC enclosure system
- AP universal console

Load capacity per caster: 265 lbs/120 kg static load.  
Overall height: 5"/125 mm

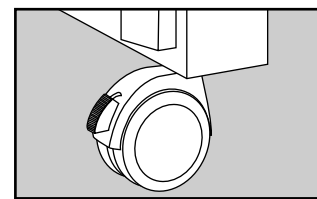
**Color:**

Cover: RAL 5018  
Casters: RAL 9005

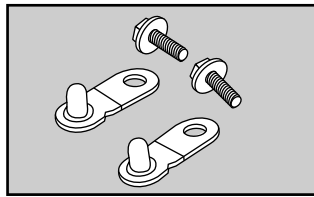
**Configuration:**

Twin casters with M12 thread, 2 with, 2 without brakes, 4 reinforcement plates, installation hardware.

Twin Casters	
Packs of	Part No.
1 set	<b>4634000</b>





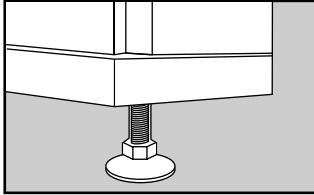


**Plinth Connector Latch For TS Enclosures**

Necessary for stabilizing suited plinths during transportation with trim pieces rotated by 90°.

**Material:** Sheet steel, galvanized, chromated.  
**Configuration:** Connector latch, bolts M8 x 16 mm.

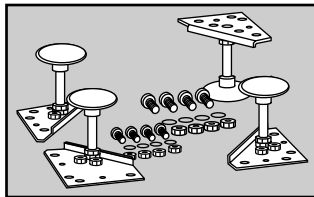
Plinth Connector Latch For TS Enclosures	
Packs of	Part No.
20	8601100



**Levelling Feet For PC/PS Enclosures**

Compensate for uneven floors and can be mounted on enclosure or on base.

Levelling Feet For PC/PS Enclosures		
For enclosures	Packs of	Part No.
PS/PC	4	4612000

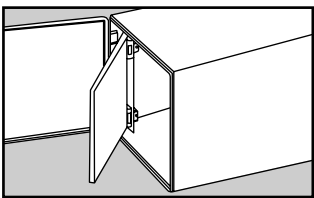


**Stainless Steel Levelling Feet**

**Configuration:** 4 levelling feet; 4 mounting plates; installation hardware.

Stainless Steel Levelling Feet		
Thread	Packs of	Part No.
M12	4	2889000

**Mounting Surfaces And Accessories**

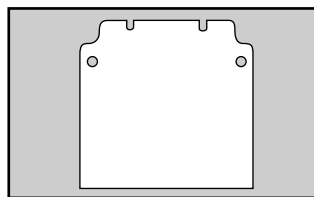


**Dead-Front Kit For AE Enclosures**

Provides a NEMA 1 safety barrier and mounting surface towards the front of AE enclosures. Easy installation and can be retrofitted to existing enclosures. Depth adjustable by using SZ 2574 system blocks and modified C-rails.

**Configuration:** mounting brackets, sheet steel panel and hardware.  
**Color:** RAL 7032 pebble grey.

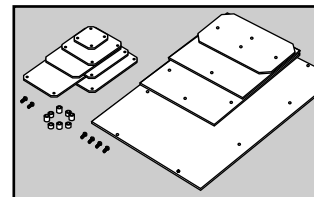
Dead-Front Kit For AE Enclosures			
For AE enclosure HxW		Packs of	Part No.
inches	mm		
20x20	500x500	1	9962957
24x24	600x600	1	9962958
30x24	760x760	1	9962959
30x30	760x760	1	9962960



**Mounting Panels For KL/EB Enclosures**

**Material:** hot-dipped galvanized zinc  
**Finish:** Type M.

Mounting Panels For KL/EB Enclosures				
Mounting panel HxW		Packs of	Part No.	Fits
inches	mm			
5.31x4.92	135x125	1	1560700	KL 1500/14
7.28x6.89	185x175	1	1562700	KL 1502
11.22x4.92	285x125	1	1561700	KL 1501/15/30/22
11.22x6.89	285x175	1	1563700	KL 1503/17/31
11.22x10.83	285x275	1	1567700	KL 1507
15.16x6.89	385x175	1	1564700	KL 1504
15.16x10.83	385x275	1	1568700	KL 1508
15.16x14.76	385x375	1	1571700	KL 1511
19.09x6.89	485x175	1	1565700	KL 1505
19.09x10.83	485x275	1	1569700	KL 1509
7.28x4.92	185x125	1	1575700	EB 1751
9.25x6.89	235x175	1	1597460	EB 1752
11.22x8.86	285x225	1	1597470	KL/EB
13.19x10.83	335x275	1	1597480	KL/EB
15.16x12.79	385x325	1	1597490	KL/EB



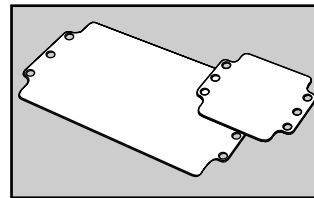
**Mounting Panels For PK Enclosures**

Provides a stable, secure, and flexible mounting surface for components inside the housing.

**Material:** .1"/2.5 mm melamine-phenol coated paper-based laminate; RAL 7035 light grey

**Configuration:** mounting panel with self-tapping installation screws and spacers.

Mounting Panels For PK Enclosures				
Fits following PK enclosures	HxW		Packs of	Part No.
	inches	mm		
PK 9508	2.91x4.33	74x110	12	9544000
PK 9510	4.33x4.33	110x110	10	9545000
PK 9517, PK 9518	5.91x5.91	150x150	10	9548000
PK 9520, PK 9521	5.91x8.66	150x220	8	9549000
PK 9523	8.66x13.03	220x331	4	9550000

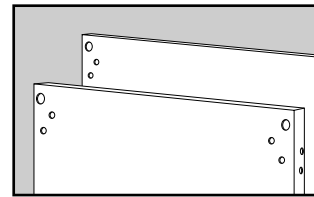


**Mounting Panels For GA Enclosures**

For optimum component mounting.

**Material:** sheet steel, zinc-plated, with installation holes.

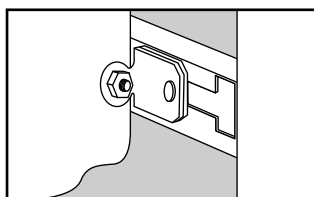
Mounting Panels For GA Enclosures				
Outside dimensions in mm		For enclosure	Packs of	Part No.
Height	Width			
112	69	9105210	10	9105700
164	69	9106210	10	9106700
109	107	9108210	2	9108700
207	107	9110210	2	9110700
144	142	9112210	2	9112700
244	142	9113210	2	9113700
314	214	9119210	1	9118700



**Mounting Panels For CS Basic Enclosures**

**Material:** 3 mm aluminum.

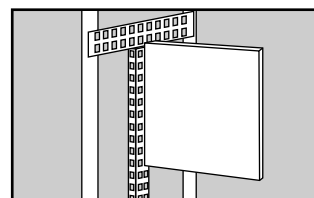
Mounting Panels		
For enclosure dimensions	Mounting plate	Part No.
H x W (mm)	H x W (mm)	
800 x 600	696 x 499	9765090
1200 x 600	1096 x 499	9765092
800 x 800	696 x 699	9765097
1200 x 800	1096 x 699	9765095
800 x 1200	696 x 499	2 x 9765090



**Mounting Panel Depth Adjustment Bracket For KS Enclosures**

Slides into molded C-rails in KS enclosures and is infinitely adjustable. Also allows installation of rails instead of mounting panel.

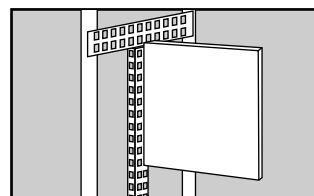
Mounting Panel Depth Adjustment Bracket For KS Enclosures		
For enclosure	Packs of	Part No.
KS 1468, KS 1480	4	1491000
KS 1432, KS 1434, KS 1444, KS 1446, KS 1466	4	1481000



**Partial Mounting Panels For TS Enclosures**

**Material:** 11 ga/3 mm hot-dipped galvanized zinc.

Partial Mounting Panels For TS Enclosures					
For enclosure width		H x W		Packs of	Part No.
inches	mm	inches	mm		
24	600	14.69x19.37	373x492	2	4131700
24	600	22.56x19.37	573x492	2	4132700
31	800	14.69x27.24	373x692	2	4136700
31	800	22.56x27.24	573x692	2	4137700



**Partial Mounting Panels For TS Enclosures**

There are numerous opportunities for installing partial mounting plates vertically in the width and depth.

They are fastened either directly to the vertical enclosure sections or using TS system chassis with mounting flanges 17 x 73 mm.

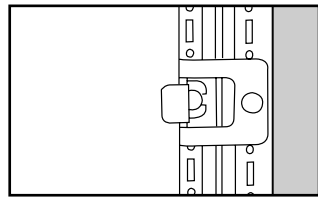
They are also easily installed horizontally between two TS system chassis with mounting flanges 17 x 73 mm.

**Material:** sheet steel, 2.5 mm, zinc-plated

**Configuration:** 1 partial mounting panel, including installation hardware.

Partial Mounting Panels For TS Enclosures				
For installation in		Dimensions	Packs of	Part No.
Enclosure width	Enclosure depth (side)			
inches	inches	inches		
24	20, 24	20 x 16	1	8614650
24	24	20 x 20	1	8614660
24, 32	24, 32	20 x 28	1	8614680
16, 32	16, 32	28 x 12	1	8614840





### Mounting Panel Fixing Attachment For TS Enclosures

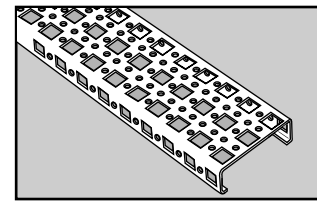
To reduce possible vibration of the mounting panel in the rearmost position.

Simply locate into any unused position on the vertical frame section of the enclosure and secure with screws.

Mounting Panel Fixing Attachment For TS Enclosures	
Packs of	Part No.
10	8800050

**Material:** sheet steel, zin-plated, chromated

**Configuration:** 10 mounting panel fixing attachments, including installation hardware.



### System Chassis For TS/PS Enclosures

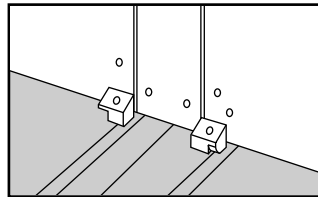
.90" x 2.82"/23 x 73 mm

Attach to frame with:

- Support bracket - PS 4183.

System Chassis For TS/PS Enclosures					
Length of chassis		For H,W,D* of enclosure		Packs of	Part No.
inches	mm	inches	mm		
11.61	295	16	400	4	4374000
15.55	395	20	500	4	4375000
19.49	495	24	600	4	4376000
27.36	695	31	800	4	4377000
35.24	895	39	1000	4	4382000
66.73	1695	71	1800	4	4379000
74.61	1895	78	2000	4	4380000
82.48	2095	86	2200	4	4381000

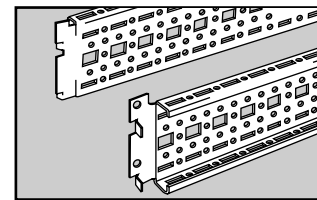
\* Installs in height, width or depth of enclosures.



### Mounting Panel Joining Piece For TS/PS Enclosures

**Material:** 11 ga/3 mm hot-dipped galvanized zinc.

Mounting Panel Joining Piece For TS/PS Enclosures			
For enclosure height		Packs of	Part No.
inches	mm		
63	1600	1	4589700
71	1800	1	4590700
78	2000	1	4591700
86	2200	1	4592700



### TS System Chassis With Mounting Flange .67" x 2.87" (17 x 73 mm)

Five rows of holes for 3-D structures or partial assembly. Simply hang into the TS frame and secure.

Option of installing between the vertical TS enclosure sections:

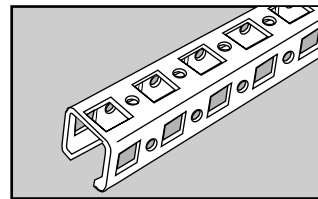
- Installed all-round on the outer fixing level
- Variable height-offset on the inner fixing level

May be installed in the enclosure width and depth, dimensions permitting.

**Material:** sheet steel, tin-plated, chromated

**Configuration:** 4 TS system chassis with mounting flanges, including installation hardware.

TS System Chassis With Mounting Flange .67" x 2.87"			
For The Outer Fixing Level			
For enclosure WxD		Packs of	Part No.
inches	mm		
16	400	4	8612140
20	500	4	8612150
24	600	4	8612160
32	800	4	8612180
40	1000	4	8612100
48	1200	4	8612120



### System Bars For PS/TS Enclosures

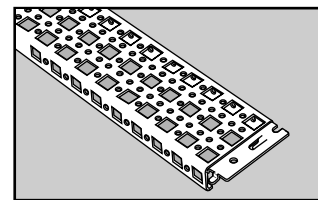
.90" x .90"/23 x 23 mm

Attach to frame with either:

- Angle bracket - PS 4181
- Dual bracket - PS 4182
- Support bracket - PS 4183
- In combination with the appropriate size bolts, slide nuts or cage nuts.

System Bars For PS/TS Enclosures					
Length of system bar		For H,W,D* of enclosure		Packs of	Part No.
inches	mm	inches	mm		
11.61	295	16	400	12	4169000
19.49	495	24	600	12	4171000
27.36	695	31	800	12	4172000
43.11	1095	48	1200	6	4174000
66.73	1695	71	1800	6	4176000

\* Installs in height, width, or depth of enclosure.

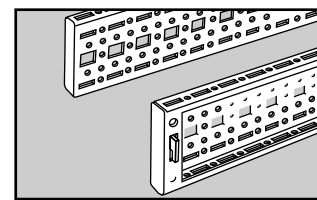


### System Chassis With Mounting Flanges For PS Enclosures

.90" x 2.82"/23 x 73 mm. Easily clips to PS frame.

System Chassis With Mounting Flanges For PS Enclosures			
For Installation In Enclosure Depth			
For enclosure depth		Packs of	Part No.
inches	mm		
16	400	4	4369000
20	500	4	4370000
24	600	4	4371000
31	800	4	4372000

System Chassis With Mounting Flanges For PS Enclosures			
For Installation In Enclosure Width			
For enclosure width		Packs of	Part No.
inches	mm		
24	600	4	4364000
31	800	4	4365000



### TS System Chassis .90 x 2.87"/23 x 73 mm

The alternative to the TS system chassis .67 x 2.87"/17 x 73 mm, with a hole pattern for captive/clip nuts instead of top and bottom slots. Simply insert into the vertical hole pattern and secure.

**Material:**

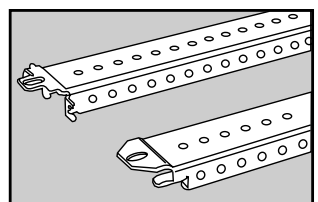
sheet steel, galvanized, chromated.

**Configuration:**

4 TS system chassis, including installation hardware.

TS System Chassis .90 x 2.87"/23 x 73 mm			
For enclosure width/depth		Packs of	Part No.
inches	mm		
20	500	4	8612550
24	600	4	8612560
32	800	4	8612580

For the inner mounting level



### TS Installation Rail .71" x 1.50" (18 x 38 mm)

**Installation options:**

- Between the vertical TS enclosure sections on the outer fixing level.
- Between the horizontal TS enclosure sections top and bottom.

May be installed in the enclosure width and depth, dimensions permitting.

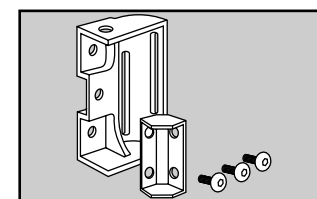
**Installation:** Simply locate and secure with a screw. The location system makes assembly and dismantling easier. It only needs to be secured on one side, but may be secured on both sides if required.

TS Installation Rail			
For enclosure width/depth in inches/mm		Packs of	Part No.
16/400		4	8612240
20/500		4	8612250
24/600		4	8612260
24/800		4	8612280

**Note:** In enclosures with a mounting panel, 2 installation rails are already included with the enclosure.

**Material:** Sheet steel, zinc-plated, chromated.

**Configuration:** 4 x TS installation rails, including installation hardware.



### TS Combination Bracket

For fastening system chassis without mounting flanges .90" x 2.87" (23 x 73 mm) or installation rails .90" x .90" (23 x 23 mm).

**Installation options:**

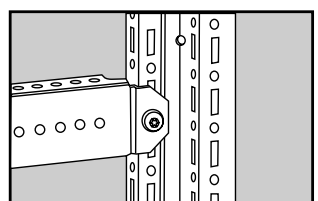
- Directly onto the TS vertical sections
- May be mounted onto the .98"/25 mm hole pattern.

TS Combination Bracket	
Packs of	Part No.
10	8800330

- May be mounted in approximately 2 mm increments (in conjunction with the locating blocks); compatible with 19" components such as small swing frames.

**Material:** Die-cast zinc

**Configuration:** 6 combination brackets 12 screws BZ 5.5 x 13 mm.



### Assembly Block For TS Enclosures

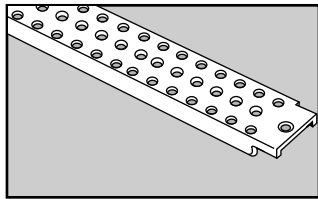
Installation in the vertical TS profiles for fast assembly of PS-compatible individual components (e.g. for mounting a door switch on the vertical TS profile).

Assembly Block	
Packs of	Part No.
4	8800310

**Material:** die-cast zinc

**Configuration:** 4 mounting blocks, including installation hardware.

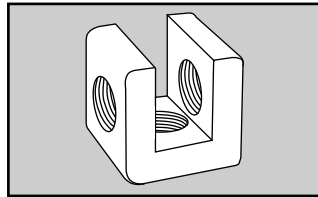




### Support Rail For Heavy Components For TS/PS Enclosures

Can be installed in depth only to support extra heavy components.

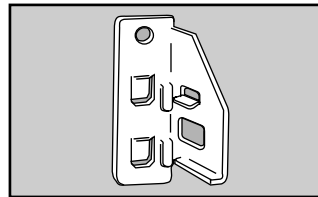
Support Rail For Heavy Components For TS/PS Enclosures				
For enclosure depth		Packs of	Part No.	
inches	mm			
20	500	4		4395000
24	600	4		4396000
31	800	4		4398000



### Slide Nuts For System Bars

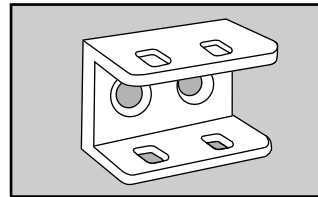
Facilitates mounting of components to system bars.

Slide Nuts For System Bars			
Size	Packs of	Part No.	
M5	20	4157000	
M6	20	4179000	
M8	20	4180000	



### Angle Bracket For .90" x .90" System Bar For TS/PS Enclosures

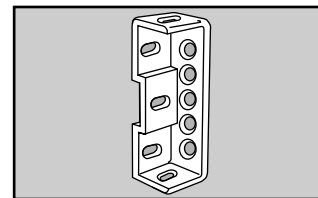
Angle Bracket For .90" x 90" System Bar For TS/PS Enclosures	
Packs of	Part No.
12 sets	4181000



### Dual Bracket For .90" x .90" System Bar For PS/TS Enclosures

Works on TS horizontal members.

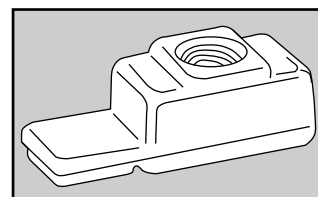
Dual Bracket For .90" x 90" System Bar For PS/TS Enclosures	
Packs of	Part No.
24 sets	4182000



### Combination Bracket For PS/TS Enclosures

For .90" x .90" system bars and .90" x 2.87" system chassis. Works on TS horizontal members.

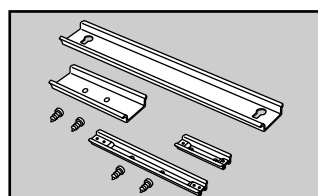
Combination Bracket For PS/TS Enclosures	
Packs of	Part No.
24 sets	4183000



### Cage Nut For PS/TS Enclosures

Fits in all square system installation holes. Zinc diecast with a finger grip that can be broken off. Works on TS horizontal members.

Cage Nut For PS/TS Enclosures		
Thread	Packs of	Part No.
M6	50	4162000
M8	50	4163000



### Installation Rails

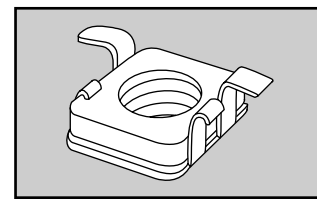
Two different types of installation rail provide high flexibility for the mounting of terminal blocks and control components.

**Material:** manufactured per EN 50 022 (TS 35/7.5)

**Configuration:** installation rails with two self-tapping installation screws.

*Note:* the calculation for the maximum number of terminals below, assumes two end retainers.

Installation Rails						
Rail	Maximum number of terminals with the following conductor cross sections			Rail length mm	Packs of	Part No.
	13 AWG 2.5 mm <sup>2</sup>	11 AWG 4 mm <sup>2</sup>	7 AWG 10 mm <sup>2</sup>			
TS 35/7.5	17	13	8	106	12	9565000

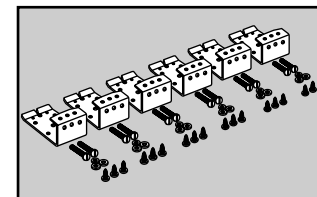


### Clip Nut

For the installation of TS system chassis, the interior assembly parts with square hole patterns as well as the horizontal enclosure frame members. Use of the clip nuts allows installation of height or depth components across corners at the same height levels.

**Material:** steel, spring steel.

Clip Nut		
Thread	Packs of	Part No.
M6	50	8800340
M8	50	8800350



### Universal Mounting Bracket For AE Enclosures

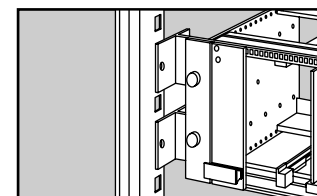
Facilitates easy and universal mounting of enclosure lights, door switches, and cable conduit clips (except SZ 2592) in AE Series compact enclosures.

Existing installation holes for mounting blocks or hinges can be

Universal Mounting Bracket For AE Enclosures	
Packs of	Part No.
6	2373000

used and screws are hidden when the door is closed. Includes installation hardware.

**Material:** galvanized, chromated sheet steel.



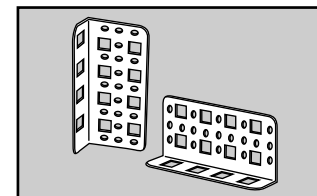
### Adaptor Kit For Mounting 19" Components In PS Cabinets

Facilitates installation of individual 19" components such as subracks, rackmount fans, front panels, etc. in 24"/600 mm wide enclosures.

**Installation:** Simply position on the outside and screw on from either the inside or the outside.

**Material:** aluminum.

Adaptor Kit For Mounting 19" Components	
Packs of	Part No.
8	4547000



### Installation Bracket

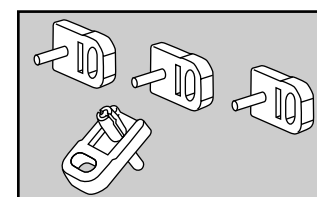
For horizontal mounting of:

- System bars PS 4171
- System chassis PS 4376
- System chassis with mounting flanges PS 4370
- Mounting panel KL 1565/KL 1569

**Material:** zinc chromated sheet steel

**Configuration:** 4 installation brackets, 12 self-tapping M5 x 10 mm screws.

Installation Bracket	
Packs of	Part No.
4	4597000



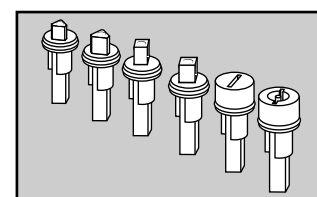
### Mounting Brackets For PK Enclosures

With four of these special brackets, a housing can be firmly attached to a flat surface with connecting pins.

**Material:** grey polyamide.

Mounting Brackets		
	Packs of	Part No.
For all enclosures	40 sets	9583000

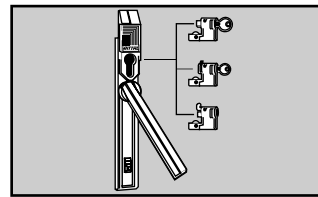
## Locking Systems



### Lock Inserts For KS Enclosures

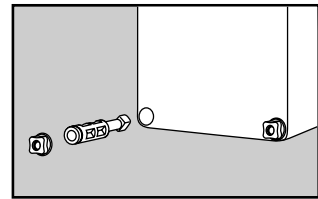
Specially designed safety lock system for KS Series fiberglass-reinforced enclosures. Replaces standard turn-buckle locks and accepts a special series of KS lock inserts and convenient thumb turn handles.

Lock Inserts For KS Enclosures		
KS lock system	Packs of	Part No.
Thumb turn handle with key	1	1484000
Screwdriver insert	1	1489000



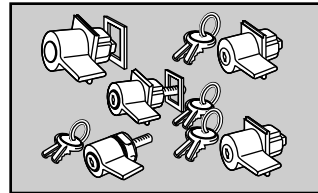
### Ergoform-S Lock System For KS Enclosures

Specially designed safety handle/lock system for KS Series fiberglass-reinforced enclosures. Accepts the whole range of standard Ergoform-S lock inserts as well as the special KS lock system inserts.

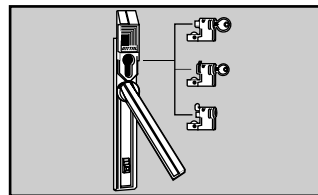


### Turn-Lock Fastener For PK Enclosures

Simply snap onto cover screw for easy installation.  
**Material:** polyamide.



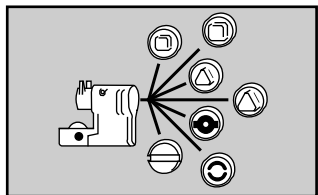
### Thumb Turn Handles



### Ergoform-S Lock System

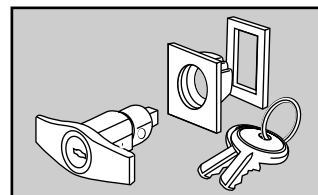
Rittal's patented security lock system for enclosures: handle springs forward for easy door opening, accepts a wide range of lock inserts, easy to install, no modifications required.

Fits all doors, viewing doors and swing frames with rod-lock type mechanism (except KS enclosures).



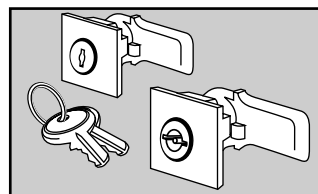
### Lock Inserts

For Ergoform-S or TS  
8611060/8611070.



### T-Handles

**Material:** die-cast zinc, chrome plated.  
**Configuration:** includes installation hardware, gasket, and 2 keys.



### Replacement Lock For AE Enclosures

Turn-buckle lock complete with double bit or lock/key insert.

Ergoform-S Lock System For KS Enclosures		
Ergoform-S lock system	Packs of	Part No.
Ergoform-S safety handle	1	1490000

Turn-Lock Fastener For PK Enclosures		
Ergoform-S lock system	Packs of	Part No.
Fits all PK enclosures	100	9582000

Thumb Turn Handles		
For	Packs of	Part No.
AE/CP	1	2576000*
AE/EB	1	2533000*
AP (top/center)	1	2599000

\* Does not fit AE 1114/1213 and AE stainless steel.  
Note: 2576000 is with No.3524E security insert.

Ergoform-S Lock System			
Type	Finish	Packs of	Part No.
Standard	Grey/brown	1	2450000
Standard	Chrome	1	2452000

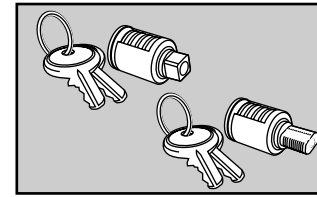
Lock Inserts			
Type	Size	Packs of	Part No.
Square	0.28"/7 mm	1	2460000
Square	0.31"/8 mm	1	2461000
Triangular	0.28"/7 mm	1	2462000
Triangular	0.31"/8 mm	1	2463000
Screwdriver	-	1	2464000
Daimler-Benz	-	1	2465000
Double bit	-	1	2466000
Key	Key # 3524 E	1	2467000
Pushbutton	-	1	2468000
Pushbutton/key	Key # 2123 E	1	2469000

T-Handles		
Type B		
Version		Part No.
With no. 3524 E security insert		2575000
Without security insert		2572000

Replacement Lock For AE Enclosures		
Replacement lock	Packs of	Part No.
With double bit insert	1	2420000*
With 3524E insert	1	2430000*

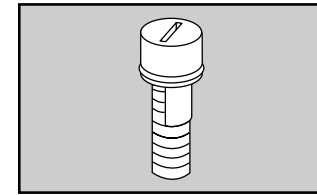
\* Does not fit AE 1114/1213 and AE stainless steel.

Stainless Steel Lock		
Description	Packs of	Part No.
Type 304 cam/latch lock w/double bit insert	1	2304000



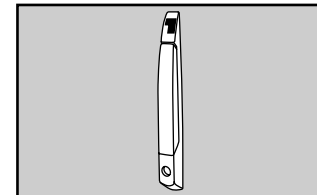
### Security Insert

Lock system with 2 keys.



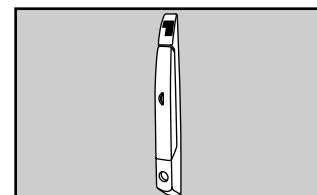
### Lock Inserts

1.61"/41 mm inserts for FT 2749 control panel lock; SR 2026/2027/2034 swing frames.



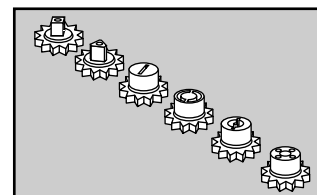
### Comfort Handle For TS Lock Inserts

Prepared for the installation of lock inserts, safety and pushbutton inserts.



### Comfort Handle For TS Lock Inserts And Padlock

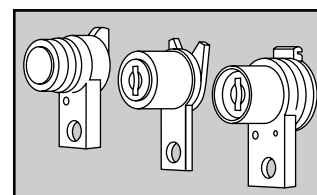
Prepared for the installation of lock inserts, safety and pushbutton inserts, and with additional hasp (hole diameter 8 mm) for a padlock.



### Lock Inserts For TS Enclosures

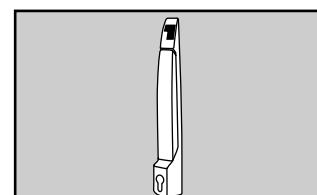
For comfort handles and the standard TS lock (in exchange for the standard double-bit lock insert).

**Material:** die-cast.



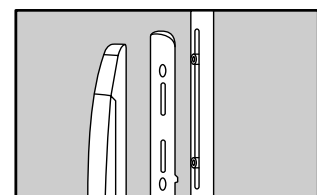
### Lock And Pushbutton Inserts For TS Enclosures

For installation in the comfort handles.



### Comfort Handle For Semi-Cylinder For TS Enclosures

Prepared for the installation of commercially available semi-cylinders, 40 or 45 mm in length, to DIN 18 254.



### Handle Adaptor For Viewing Door For TS Enclosures

The handle adaptor compensates for the design chamber in the door profile to enable installation of the comfort handle.

Security Insert		
For	Packs of	Part No.
AE/CP	1	2571000

\* For all AE, EL and CP enclosures. Does not fit AE 1114/1213.

Lock Inserts		
Type	Packs of	Part No.
S/S screwdriver (1.61")	1	9964254

Comfort Handle For Lock Inserts	
Design	Part No.
RAL 7032	8611010
RAL 7035	8611020

Comfort Handle For Lock Inserts	
Design	Part No.
RAL 7032	8611030

Lock Inserts For TS Enclosures	
Design	Part No.
Screwdriver	8611140
Double-bit, 3 mm	8611160

Lock And Pushbutton Inserts For TS Enclosures	
Design	Part No.
Lock insert lock No. 3524 E	8611180
Pushbutton insert	8611190
Pushbutton and lock insert, lock No. 12321	8611200

Comfort Handle For Semi-Cylinder For TS Enclosures	
Design	Part No.
RAL 7032	8611060
RAL 7035	8611070

\* Use lock inserts (2460000-2469000).

Handle Adaptor For Viewing Door For TS Enclosures	
Packs of	Part No.
1	8611080

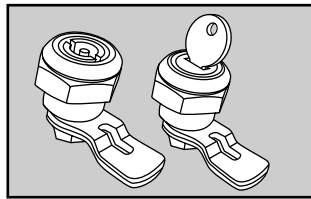
**Material:** plastic

**Color:** RAL 7035

**Configuration:** 1 adaptor plate, 1 extension for drive, 2 fixing screws.





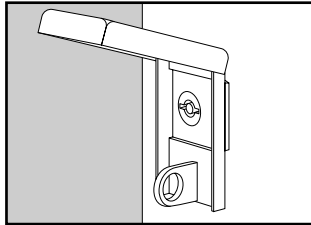


### Standard Cam/Latch Lock

With nickel-plated, die-cast zinc housing.

Standard Cam/Latch Lock		
	Packs of	Part No.
Cam/latch lock	1	2520000
With double-bit insert*	1	2520000

\* Can be replaced with Type C inserts.



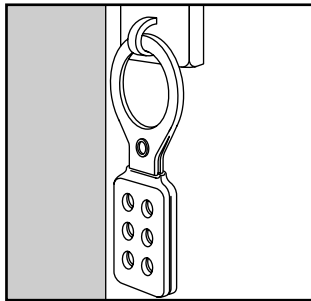
### Padlock Hasp

Can be retrofitted on all AE/EB compact enclosures with Type A lock. Ready for padlocks and safety lockouts.

**Material:** zinc diecast

**Configuration:** padlock hasp including installation hardware.

Padlock Hasp		
	Packs of	Part No.
1	1	2493000



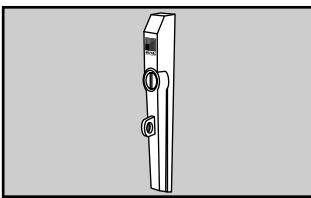
### Safety Lockout

Prevents unauthorized opening of the enclosure and accidental activation of the system. The safety lockout is the ideal solution in cases where individual access for several persons is required for maintenance and repair purposes. The safety lockout provides space for 6 padlocks.

**Material:** sheet steel, chromated

**Configuration:** safety lockout without padlocks.

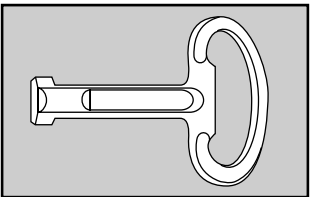
Safety Lockout		
	Packs of	Part No.
1	1	2493500



### Ergoform-S Handle System For CS Basic Enclosures

The Ergoform-S padlock handle system provides comfort and security with an additional shackle for a padlock. Hole diameter of shackle: 7 mm.

Ergoform-S Padlock Handle System		
	Packs of	Part No.
1	1	9785030



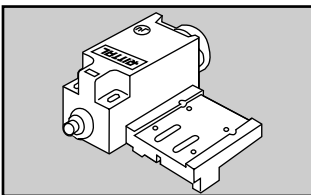
### Enclosure Keys

One double bit key is supplied with every Rittal enclosure, except KS and PK plastic enclosures.

Enclosure Keys			
Type	Packs of	Part No.	
Double bit # 5	1	2531000	
.31"/8 mm triangle	1	2546000	
.28"/7 mm square	1	2547000	
.31"/8 mm square	1	2548000	
Master set*	1	2549000	
Yale-Type No. 3524E	1	2532000	
1 Key # 2123E1	1	9957740	

(\* Includes: double bit, 28"/.31" (7/8 mm) triangle and square, and screwdriver.)

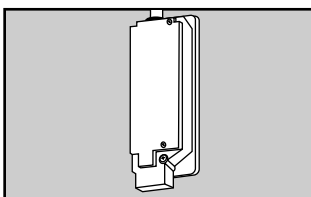
## Door System Accessories



### Door Switch

Activates enclosure lighting and/or enclosure climate control components.

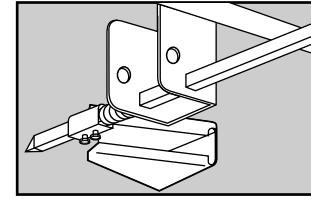
Door Switch		
	Packs of	Part No.
Complete set	1	4127000



### Electrical Security Interlock Kit For PS Enclosures

- Locks all doors when power is on
- Power is only available when doors are closed
- Additional contact monitors locking magnets.

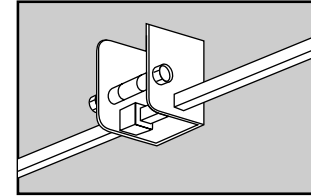
Electrical Security Interlock Kit For PS Enclosures			
Connection voltage for locking magnet	Packs of	Part No.	
24V DC 8W	1	2418000	
120V AC 8VA	1	2419000	



### Slave Door Defeater Kit

Installs on main door. Activates interlock mechanism for adjoining doors. Recommended for non-FMD applications.

Slave Door Defeater Kit		
	Packs of	Part No.
Interlock activator	1	4912000

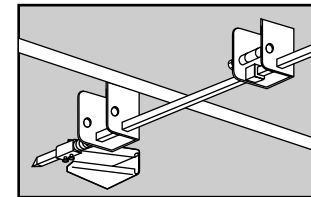


### Slave Door Interlock Kit For TS/PS Enclosures

Installs on slave door. Requires interlocking rod.

Master Door Defeater Kit		
	Packs of	Part No.
1	1	4910000

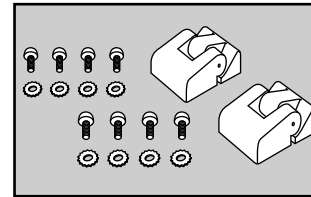
Slave Door Interlock Kit For TS/PS Enclosures		
	Packs of	Part No.
Slave door interlock	1	4911000



### Interlocking Rod For TS/PS Enclosures

Need one per door, depending on width of slave enclosure.

Interlocking Rod For TS/PS Enclosures			
For slave enclosure width		Packs of	Part No.
inches	mm		
32	800	10	4918000



### Exterior Hinges

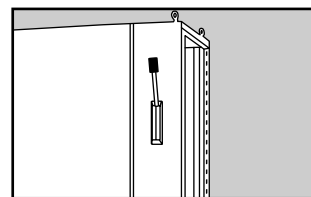
To fasten cover to enclosure body. Includes drilling template.

**Material:** cast aluminum

**Color:** silver grey (RAL 7001)

**Configuration:** 2 hinges, 8 screws.

Exterior Hinges		
For enclosure	Packs of	Part No.
GA 9108210	2	9123000
GA 9110210		
GA 9111210		
GA 9112210		
GA 9113210		
GA 9119210		



### Flange Mount Disconnect System For TS/PS Enclosures

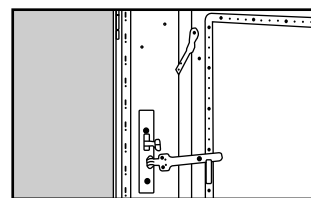
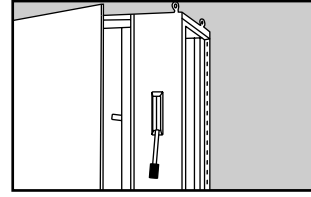
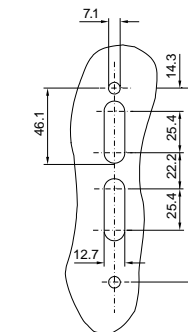
Integrates door lock, operating levers and door handles. Slave doors can be opened only after the master door has been opened. Accepts all standard disconnects including:

- Allen Bradley 1494 V-H1
- Square D 9422 A1
- ITE Siemens Max-Flex Series/FHOH
- General Electric STDA Type 1 and 2
- Cutler-Hammer Flex Shaft Series

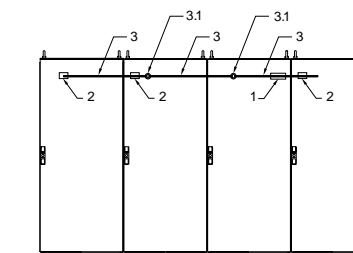
**Note:** FMD master cabinet must be to the far right.

Flange Mount Disconnect System For TS/PS Enclosures	
Required components	Part No.
Master door defeater	8611310
+slave door interlock	4911000
+interlocking rods	see left

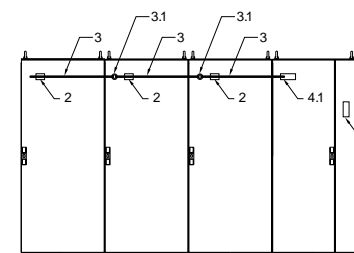
Cutout for disconnect



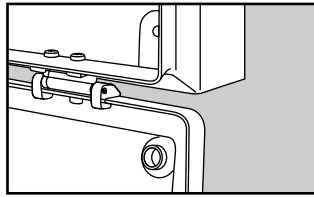
### FMD for TS enclosure suites (European version disconnect)



### FMD (USA version)



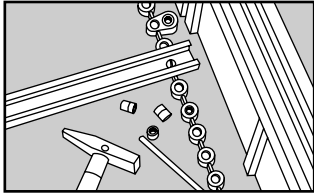
- Operating mechanism, installation in the main/master enclosure
- Slave door defeater, installation in side/slave enclosure
- Interlocking rods
- 3.1 Connector (included with the interlocking rods)
- Master door defeater (for flange mount disconnect, USA version)
- 4.1 Operating mechanism, installation in main/master cabinet (enclosed with the master door defeater)



### Cover Hinge

Is simply screwed onto the perimeter channel and door edge.

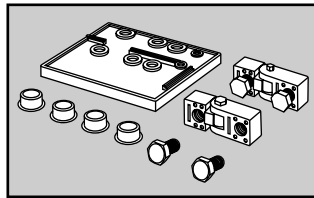
Cover Hinge		
	Packs of	Part No.
Cover hinge	6	1592000



### Threaded Insert Nuts For KS

Fit in molded fixing nuts on door and inside rear wall of KS enclosures and facilitate mounting of DIN rails, panels, etc.

Threaded Insert Nuts		
	Packs of	Part No.
Threaded insert nuts	20	1482000

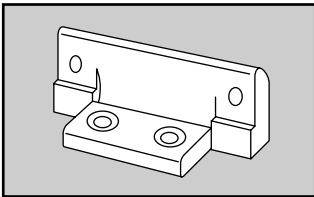


### Hinges

Can be used to connect covers to housings. A drilling template is included to make installation easy.

**Configuration:** 1 kit = 2 hinges, 4 installation screws, 4 polyethylene cover caps, 1 drilling template.

Hinges			
For enclosures	Material	Packs of	Part No.
PK 9517-9523	polystyrol	10 kits	9581000

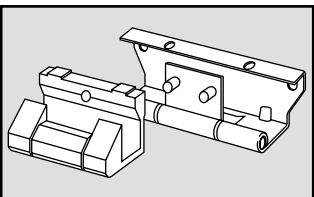


### 180° Hinges For AE Enclosures

To replace standard 130° hinges (installation hardware included).

**Material:** die-cast zinc.

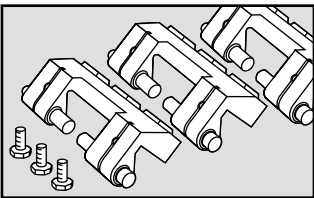
180° Hinges For AE Enclosures	
Packs of	Part No.
2	2449000



### 180° Hinges For PS Enclosures

Replace standard 130° hinges, includes installation hardware.

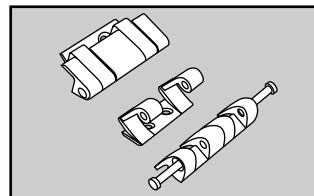
180° Hinges For PS Enclosures		
180° Hinge for	Packs of	Part No.
PS	6	4189000



### 130° Hinges For PS Enclosures

For retrofitting a PS door in place of a rear wall.

130° Hinges For PS Enclosures		
130° Hinge for	Packs of	Part No.
PS	6	4190000



### 180° Hinges For TS Enclosures

For replacement of TS sheet steel doors with 130° hinges. Door mountings such as the comfort handle may reduce the door opening angle.

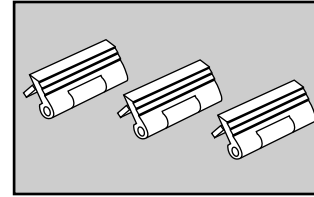
Easy assembly:

- Exchange the hinge parts on the frame for 180° hinges (4 screws)
- Drill the door at the pre-marked points
- Attach the hinge parts onto the door
- Align the door into position
- Press the captive hinge pins into place, and it's done!

180° Hinges For TS Enclosures		
Packs of	Color	Part No.
4	RAL 7032	8800030
4	RAL 7035	8800190

**Configuration:** 4 x 180° hinges, including installation hardware; for double doors, two packs are required.

**Note:** The hinge pins may only be actuated and the door removed with the door open. The hinge cannot be dismantled from the outside with the door closed (access protection).



### Hinge For Side Wall For TS Enclosures

The 180° opening angle allows uninhibited access. Assembly may be carried out from either the inside or outside of the enclosure: simply replace 3 enclosure wall fasteners with hinges.

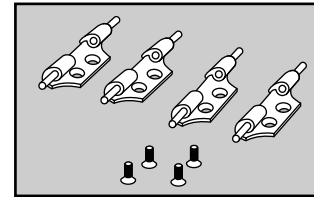
**Material:** die-cast zinc

**Surface finish:** textured powder coat RAL 7032.

Hinge For Side Wall	
Packs of	Part No.
6	8800010

**Configuration:** 6 hinges, including installation hardware.

**Note:** the hinges of the side wall and door must not be fitted on the same enclosure section.



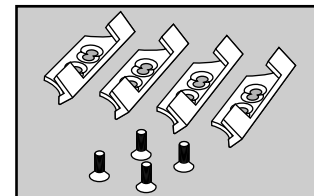
### 130° Hinges For TS Enclosures

For retrofitting a TS sheet steel door in place of a rear wall.

**Material:** die-cast zinc

**Configuration:** 4 x 130° hinges, including installation hardware.

130° Hinges For TS Enclosures	
Packs of	Part No.
4	8800020



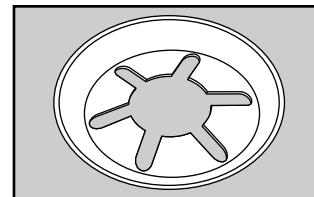
### Fixing Components For Frame For TS Enclosures

For retrofitting a viewing door or sheet steel door in place of a rear wall.

**Material:** die-cast zinc

**Configuration:** 4 fixing components including installation hardware.

Fixing Components For Frame	
Packs of	Part No.
4	8800040



### Spring Washer For TS Enclosures

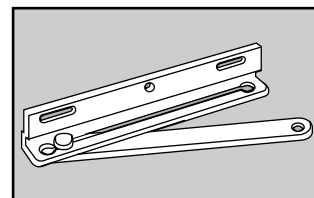
When dismantling the locking rod, the standard spring washers cannot be used again.

**Material:** spring steel

**Surface finish:** zinc-plated chromated.

Spring Washer	
Packs of	Part No.
100	8800070

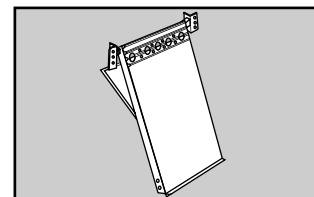
**Note:** For a TS8 spring washer installation tool, order Part No. 8800270.



### Door Stop

Keeps door open.

Door Stop		
Door stop for	Packs of	Part No.
TS/PS	5	4583000
AE	5	2519000



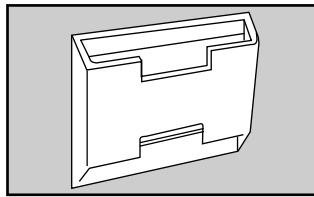
### Writing Board

For TS/PS enclosures. Folds up for easy storage. Can be screwed to vertical door rails. These 8" wide units can be joined together to provide a larger writing area.

- 1 unit for 16"/400 mm wide cabinets
- 2 units for 24"/600 mm wide cabinets
- 3 units for 32" and 40"/800 mm wide enclosures.

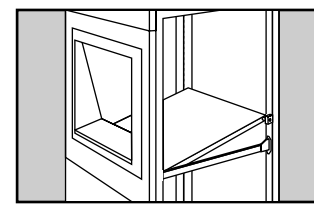
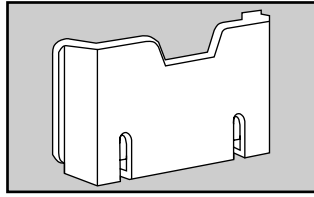
Writing Board		
	Packs of	Part No.
Writing board	1	4120000





**Print Pockets**

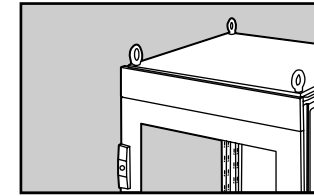
Print Pockets				
Description	Paper size	Packs of	Part No.	For enclosure (inches/mm)
Transparent pouch	8.5"x11"	1	<b>2510000</b>	any size
Molded plastic	11"x17"	1	<b>2513000</b>	any size
	8.5"x11"	1	<b>2514000</b>	any size
Sheet steel	10"x18"	1	<b>4116000</b>	24"/600 mm wide
	10"x26"	1	<b>4118000</b>	32"/800 mm wide



**Monitor Bezel**

For 24" and 32"/600 and 800 mm wide enclosures. Installs over monitor window cut-out in door.

Monitor Bezel				
Outside HxW	Required cut-out	Viewing area	Packs of	Part No.
16.93"x18.50"/ 430x470 mm	14.76"x16.34"/ 375x415 mm	12.80"x14.76"/ 325x375 mm	1	<b>2305000</b>



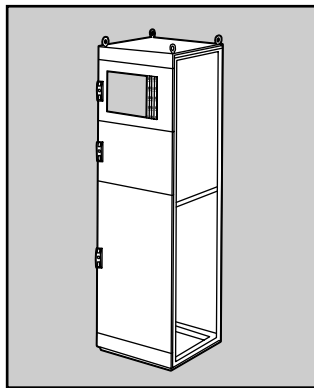
**Trim Panels**

Required for top and bottom finishing  
**Material:** sheet steel  
**Finish:** textured RAL 7032  
**Configuration:** 2 panels, installation hardware.

Trim Panels		
Height in/mm	Part No.	
	Width 24/600	Width 32/800
4/100	<b>8801610</b>	<b>8801810</b>

**Additional parts needed:** Mullion, see below.

**Modular Front Design Accessories**



**Modular Front Design**

can be used as the door or rear wall for TS 8606612, H x W x D 79 x 24 x 24"/2000 x 600 x 600 mm, TS 8806612, H x W x D 79 x 32 x 24"/2000 x 800 x 600 mm, as well as all other 24"/600 mm and 32"/800 mm wide TS8 enclosures. It may be used as long as the modular front is bayed between two enclosures with normal doors.

With a single enclosure, or at the end of a row of enclosures, special side walls like the TS 8106212 are required.

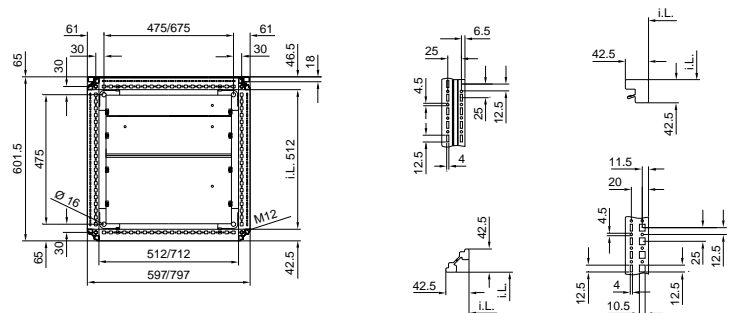
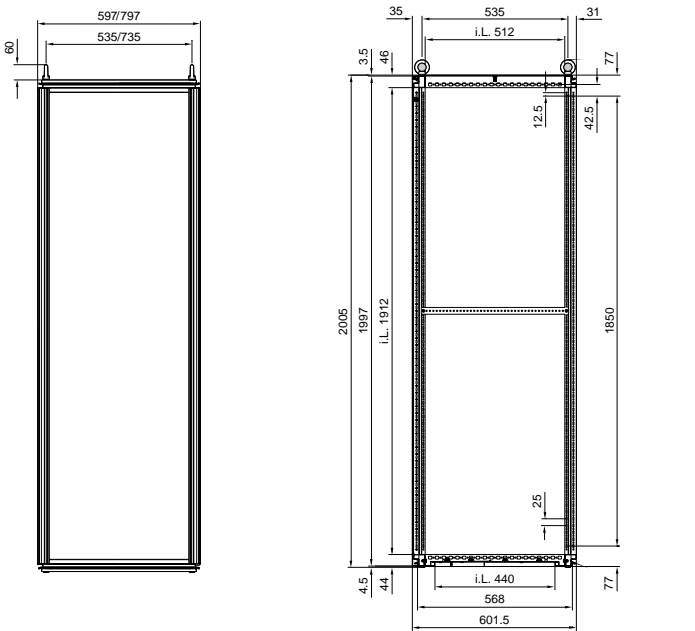
The partial doors, with or without viewing windows, can be combined as desired by using mullions. The top and bottom always has to have a mullion and trim panel.

The diagram on page ACC 19, will show the important points and required parts for you individualized front design.

**Material/Finish:**

- Frame:** 1.5 mm sheet steel, E-coat primer RAL 7044 light grey.
- Roof/rear wall:** 1.5 mm sheet steel, E-coat primer RAL 7044 light grey; textured powder coat on the outside RAL 7032 pebble grey.
- Cable entry plates:** 1.5 mm sheet steel, galvanized.

Modular Front Design Enclosures			
Dimensions			Part No.
H	W	D	
79/2000	24/600	24/600	<b>8606612</b>
79/2000	32/800	24/600	<b>8806612</b>



**Partial Doors**

With or without viewing window. Choice of hinging right or left. For doors without viewing windows (height 24"/600 mm – 40"/1000 mm) installation of the monitor frame SZ 2305000 is possible. Standard double bit lock insert is exchangeable for other lock inserts. Comfort handles may be used with 16"/400 mm or higher partial doors.

**Material:** sheet steel or sheet steel with 7/64"/3 mm acrylic glass pane.

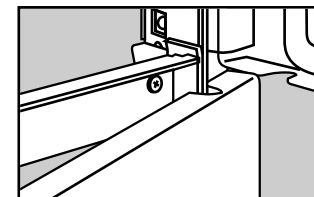
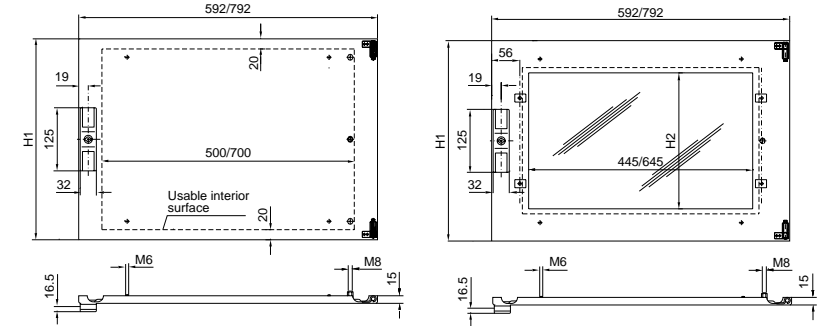
**Finish:** textured RAL 7032

**Configuration:** 1 partial door with hinges and locking system, including double bit insert.

**Additional parts needed:** Mullion, see below.

Partial Doors Without Viewing Window			
Height in/mm	H1 mm	Part No.	
		Width 600	Width 800
8/200	198	<b>8801620</b>	<b>8801820</b>
16/400	398	<b>8801640</b>	<b>8801840</b>
24/600	598	<b>8801660</b>	<b>8801860</b>
32/800	798	<b>8801680</b>	<b>8801880</b>
40/1000	998	<b>8801600</b>	<b>8801800</b>

Partial Doors With Viewing Window				
Height in/mm	H1 mm	H2 mm	Part No.	
			Width 600	Width 800
16/400	398	270	<b>8801650</b>	<b>8801850</b>
24/600	598	470	<b>8801670</b>	<b>8801870</b>
32/800	798	670	<b>8801690</b>	<b>8801890</b>



**Mullion**

As sealing member between:

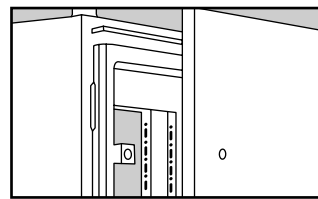
- trim strips
  - partial doors
- Installation material included.

**Material:** sheet steel

**Color:** RAL 7044.

Mullion		
Packs of	Part No.	
	Width 24"/600 mm	Width 32"/800 mm
5	<b>8801630</b>	<b>8801830</b>





### Side Walls For The Modular Front Design

To be installed on the vertical profile from the inside. These special side walls are required, as standard side wall fasteners would interfere with partial door hardware.

**Material:** sheet steel 1/16"/1.5 mm

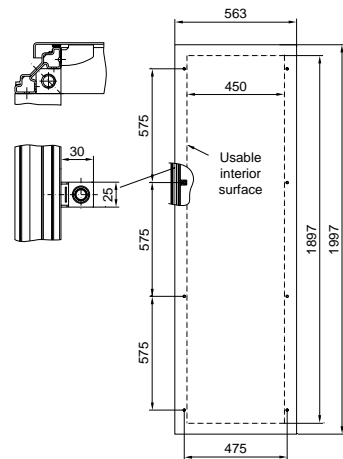
**Ratings:** NEMA 12/IP 55 per EN 60529/10.91

**Finish:** E-coat primer RAL 7044; textured powder coat on the outside RAL 7032.

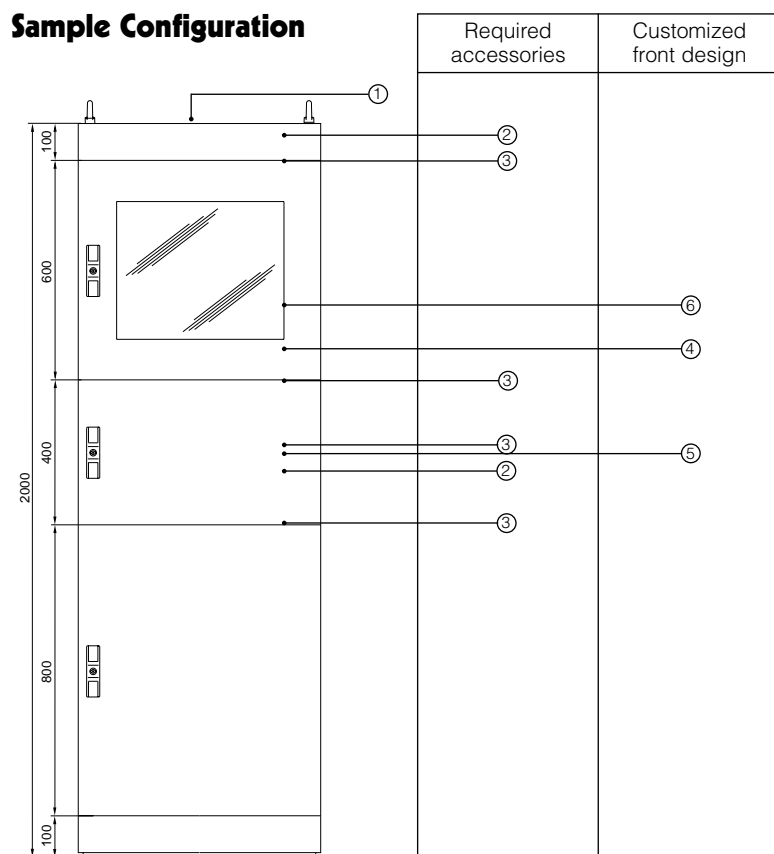
**Configuration:** 2 side walls including installation materials.

Side Walls				
For enclosure		Outside dimensions		Part No.
Height in/mm	Depth in/mm	Height mm	Depth mm	
79/200	24/600	1997	563	<b>8106212</b>

**Note:** Also suitable for enclosures without modular front design.

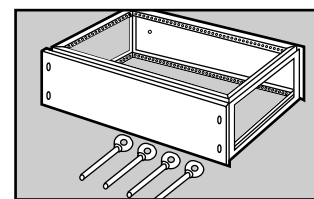


### Sample Configuration



#### Legend:

- ① Basic enclosure (8606612/8806612)
- ② Trim strips
- ③ Mullion
- ④ Partial door with viewing window, height 24"/600 mm
- ⑤ Partial door without viewing window, height 16"/400 mm
- ⑥ Partial door without viewing door, height 32"/800 mm



### Roof Module For TS Enclosures

Installs on top of enclosure and can be used for cable routing from above or for power distribution via busbars to a suite of connected enclosures. Increases height of enclosures by approximately 8"/200 mm.

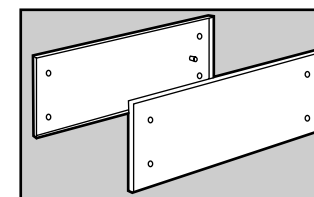
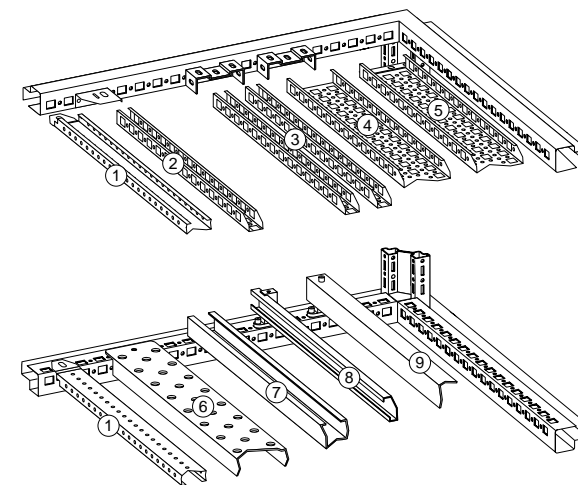
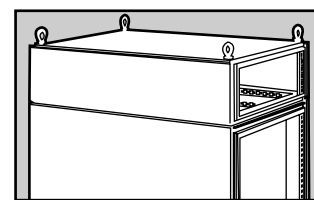
See diagram and explanations below for installation accessories for top and bottom.

**Material:** sheet steel 1/16"/1.5 mm

**Finish:** E-coat primer RAL 7044; textured powder coat on the outside RAL 7032.

#### Configuration:

- 1 roof module,
- 2 trim panels (front and back),
- 4 threaded bars with eyebolts.

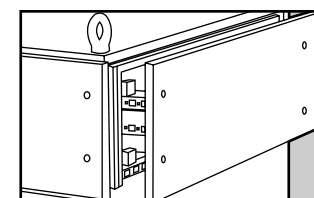


### Side Wall For Roof Module

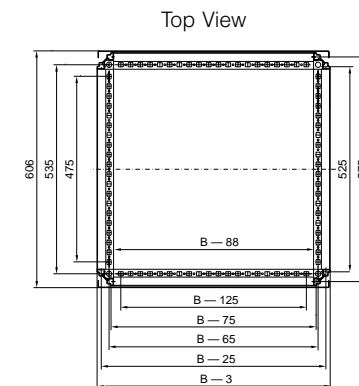
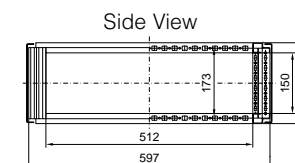
For side cover of roof modules or of a suited combination.

**Material:** sheet steel, 1/16"/1.5 mm

**Finish:** E-coat primer RAL 7044; textured powder coat on the outside RAL 7032.



Roof Module For TS Enclosures		
For enclosures		Part No.
Width (B) inches/mm	Depth inches/mm	
16/400	24/600	<b>8801720</b>
24/600	24/600	<b>8801730</b>
32/800	24/600	<b>8801740</b>
40/1000	24/600	<b>8801750</b>
48/1200	24/600	<b>8801760</b>



#### Installation accessories:

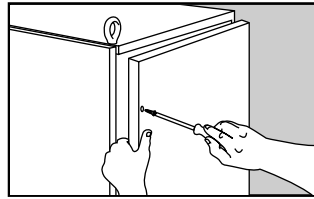
- ① TS system bar 18 x 38 mm
- ② PS system bar 23 x 23 mm with angle bracket
- ③ PS system bar 23 x 23 mm with combination bracket PS
- ④ PS system chassis 23 x 73 mm with combination bracket PS
- ⑤ PS system chassis 23 x 73 mm with flanges
- ⑥ Installation rail
- ⑦ System installation rail
- ⑧ C-rail 30/15 with holding or spacer bracket
- ⑨ Cable clamping rail

Side Wall For Roof Module	
Packs of	Part No.
2	<b>8801770</b>





# Walls & Partitions



## Side Walls For PS Enclosures

To enclose a freestanding or modular suite of enclosures. Easy to hang in place and secure with 6 screws.

**Material:** 16 ga/1.5 mm sheet steel  
**Color:** RAL 7032 pebble grey.

Side Walls For PS Enclosures						
Nominal dimensions	H	W	H	W	Packs of	Part No.
	inches	inches	mm	mm		
62"x24"	62.99	23.62	1600	600	2	<b>4166200</b>
62"x32"	62.99	31.50	1600	800	2	<b>4168200</b>
71"x16"	70.87	15.75	1800	400	2	<b>4184200</b>
71"x20"	70.87	19.69	1800	500	2	<b>4185200</b>
71"x24"	70.87	23.62	1800	600	2	<b>4186200</b>
71"x32"	70.87	31.50	1800	800	2	<b>4188200</b>
78"x16"	78.74	15.75	2000	400	2	<b>4104200</b>
78"x20"	78.74	19.69	2000	500	2	<b>4105200</b>
78"x24"	78.74	23.62	2000	600	2	<b>4106200</b>
78"x32"	78.74	31.50	2000	800	2	<b>4108200</b>
78"x40"	78.74	39.37	2000	1000	2	<b>4100200</b>
86"x20"	86.61	19.69	2200	500	2	<b>4125200</b>
86"x24"	86.61	23.62	2200	600	2	<b>4126200</b>
86"x32"	86.61	31.50	2200	800	2	<b>4128200</b>

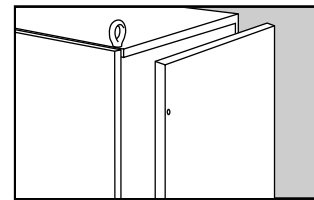
## PS Stainless Steel Side Walls

**Material:** Type 304 stainless steel.

PS Stainless Steel Side Walls					
H	W	H	W	Packs of	Part No.
inches	inches	mm	mm		
40	24	2000	600	2	<b>4466000</b>

## EMC Side Walls For PS Enclosures

EMC Side Walls For PS Enclosures						
Nominal dimensions	H	W	H	W	Packs of	Part No.
	inches	inches	mm	mm		
78"x24"	78.74	23.62	2000	600	2	<b>4106700</b>



## Side Walls For TS Enclosures

Easy positioning on the frame with the location aid. Six enclosure wall fasteners with grounding inserts ensure automatic continuous bonding and higher EMC protection. Grounding bolts with contact surface are pre-integrated.

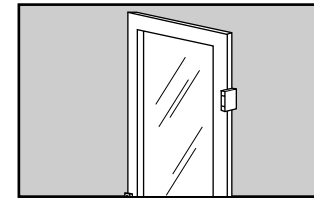
*Note:* Enclosure wall fasteners may optionally be fitted from the inside or outside of the enclosure.

**Material:** sheet steel 1.5 mm  
**Ratings:** NEMA 12/IP 55 to EN 60 529/10.91

*Surface finish:* e-coat primer in RAL 7044, textured powder coat RAL 7032 on the outside.

Side Walls For TS Enclosures						
For enclosure		External dimensions		Packs of	Part No.	
Height	Depth	Height	Depth			
inches/mm	inches/mm	inches/mm	inches/mm			
55/1400	20/500	55/1397	19/462	2	<b>8145200</b>	
71/1800	16/400	71/1797	15/362	2	<b>8184200</b>	
71/1800	20/500	71/1797	19/462	2	<b>8185200</b>	
71/1800	24/600	71/1797	23/562	2	<b>8186200</b>	
79/2000	16/400	79/1997	15/362	2	<b>8104200</b>	
79/2000	20/500	79/1997	19/462	2	<b>8105200</b>	
79/2000	24/600	79/1997	23/562	2	<b>8106200</b>	
79/2000	32/800	79/1997	31/762	2	<b>8108200</b>	
87/2200	24/600	87/2197	23/562	2	<b>8126200</b>	

**Configuration:** 2 side walls including 12 enclosure pal holders, 12 raised torx countersunk screws and 12 hex screws, as well as 12 grounding inserts.



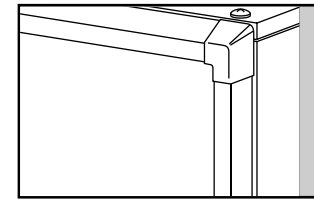
## Viewing Doors For PS Enclosures

Provide maximum visibility of components in enclosure. Rod-type lock system with double-bit insert that can easily be exchanged for the Ergoform-S handle system. Standard 180° hinges. A simple clip-in strip makes it easy to exchange the 12"/3 mm security glass window. Top trim panel can be used to display company logo or copy.

**Ratings:** NEMA 12/IP 54 per EN 60 529/10.91

**Material:** aluminum frame, security glass window

**Color:** RAL 7035 light grey.

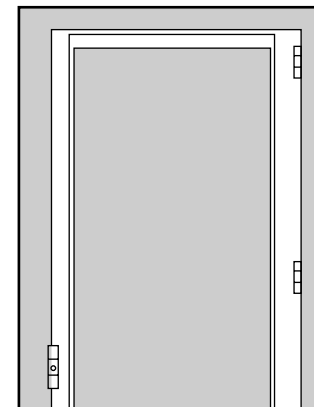


## Bezel Kit For PS Enclosures

Covers front of enclosure frame when no door is used. One size fits all enclosure sizes. Just trim aluminum frame sections to desired length and connect with corner pieces.

Viewing Doors For PS Enclosures			Part No.
For enclosure HxW			
inches	mm		
71x24	1800x600		<b>4504000</b>
80x24	2000x600		<b>4505000</b>
80x32	2000x800		<b>4509000</b>
86x32	2200x800		<b>4587000</b>

Bezel Kit				Packs of	Part No.
For enclosures					
Height	Width				
Up to 78"/2000 mm	Up to 48"/1200 mm	1	<b>4578200</b>		



## Viewing Door For TS Enclosures

May be fitted instead of a sheet steel door or rear wall, for a maximum view of the enclosure interior. The viewing doors are distinguished by outstanding designs:

*Frame:*

- Robust extruded aluminum section
- Die-cast zinc corner pieces

*Pane:*

- Single-pane safety glass (ESG), 3 mm thick
- Mask imprinted from the inside of the door

*Lock:*

- Equipped with double-bit lock insert as standard
- May be exchanged for lock inserts or all comfort handles

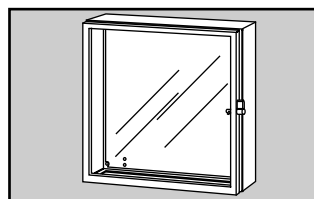
*Hinges:*

- Four 180° hinges

**Ratings:** NEMA 12/IP 55 to EN 60 529/10.91

Viewing Door For TS Enclosures					Part No.
For enclosure		Width			
Height		inches	mm		
71	1800	24	600	<b>8610680</b>	
71	1800	32	800	<b>8610880</b>	
79	2000	24	600	<b>8610600</b>	
79	2000	32	800	<b>8610800</b>	
87	2200	24	600	<b>8610620</b>	
87	2200	32	800	<b>8610820</b>	

# Viewing Doors & Windows



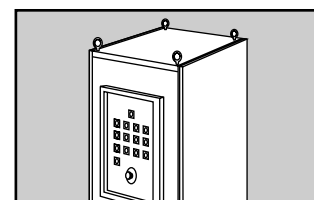
## Viewing Windows For AE And Larger Enclosures

Available in two depth sizes for surface mounting on enclosure door or to replace standard enclosure door.

**Ratings:** NEMA 12/IP 54 per EN 60 529/10.91

Viewing Windows For AE And Larger Enclosures			
HxWxD	Packs of	Part No.	Fits
inches			
15x24x1.5	1	<b>2730000</b>	AE 1050, 1339
20x20x1.5	1	<b>2733000</b>	AE 1050, 1350
20x20x2.5	1	<b>2763000</b>	
24x24x1.5	1	<b>2731000</b>	AE 1060, 1360
30x24x1.5	1	<b>2732000</b>	AE 1076, 1376

\* Surface mounting only.



## Control Panels

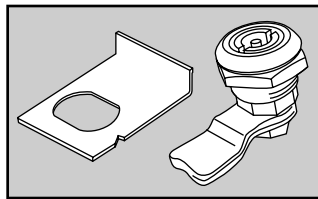
These aluminum control panels can be used to convert standard AE enclosures into display and control boxes. They can be mounted:

- On any surface of sufficient size
- On the rear of AE enclosures
- To replace standard sheet steel doors on AE enclosures.

**Ratings:** NEMA 12/IP 54 per EN 60 529/10.19

Control Panels				
HxWxD	Packs of	Part No.	Fit on rear of	Use as door for
12"x8"x1.5"	1	<b>2740000*</b>	AE 1032, 1035	
12"x15"x1.5"	1	<b>2741000</b>	AE 1030, 1031	AE 1030, 1031
15"x24"x1.5"	1	<b>2744000</b>	AE 1339	AE 1339
24"x24"x1.5"	1	<b>2746000</b>	AE 1060, 1360	AE 1060, 1360

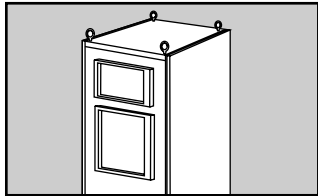
\*Can only be used on rear wall.



### Turnbuckle Lock For Control Panels

Can be retrofitted on control panel enclosures, in either the control panel or the enclosure wall. Includes double-bit insert.

Turnbuckle Lock For Control Panel		
	Packs of	Part No.
Turnbuckle lock	2	2749000

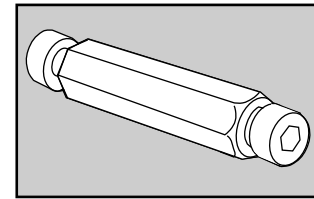


### Plexiglass Covers For Cutouts For TS/PS Enclosures

NEMA 12, available in 19" and metric sizes. With special gasketing and standard, keyed security lock, these smoked plexiglass covers provide ideal protection against dust, dirt and unauthorized access. Hinged on side. For surface mounting only.

19" Plexiglass Covers - 1.87"/47.5 mm Deep				
U	Height inches/mm	Wide inches/mm	Packs of	Part No.
3	6.22/158	12.60/320	1	2780000
6	11.48/291.5	21.02/534	1	2782000

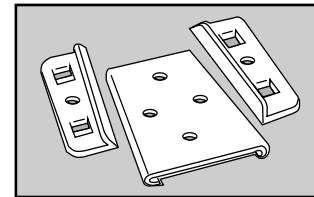
19" Plexiglass Covers - 1.87"/47.5 mm Deep				
HxW	Height inches/mm	Wide inches/mm	Packs of	Part No.
8x16	7.87/200	15.75/400	1	2784000



### Interconnecting Kit For PS Enclosures

These strong hexagon spacers ensure a strong, simple and secure fit between suited enclosures.

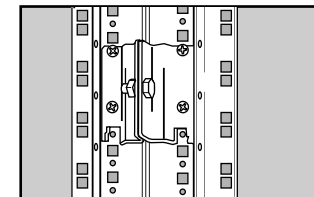
Interconnecting Kit		
	Packs of	Part No.
Interconnecting kit	6	4580000



### Quick Connecting Wedge For PS Enclosures

Just clip on the brackets and drive the wedge down. Ideal for rapid, on-site connection of cabinets; also suitable for temporary use. Not suitable for transporting interconnected cabinets.

Quick Connecting Wedge		
	Packs of	Part No.
Quick connecting wedge	6	4581000

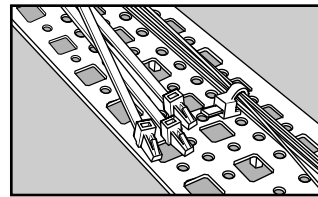


### Universal Connection Bracket For PS Enclosures

For PS electronic enclosure systems and other cabinets when rear walls or doors cannot be removed, or when partition or plug walls already have been installed.

Universal Connection Bracket		
	Packs of	Part No.
Universal connection bracket	6 pair	4584000

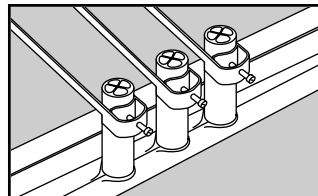
## Cable Management



### Cable Ties

Clip into system installation holes.

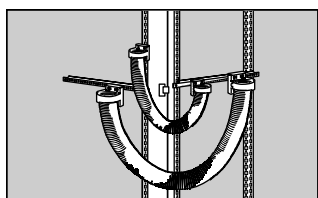
Cable Ties		
	Packs of	Part No.
Cable ties	100	2597000



### Cable Entry Gasket

Embeds most cable sizes. Installs without tools. Foam rubber cable entry gasket with self-adhesive backing can be cut to size.

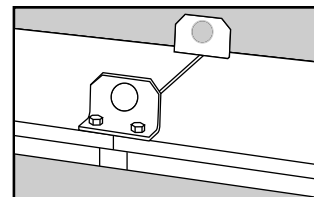
Cable Entry Gasket		
	Packs of	Part No.
Cable entry gasket	10 ft./3 m	2573000



### Cable Conduit Clips

Used to hold flexible conduit. No drilling necessary, cable conduit clips snap into standard installation holes. Made of polyamide. Includes installation hardware.

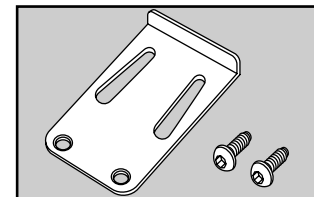
Cable Conduit Clips			
For cable conduit Ø		Packs of	Part No.
inches	mm		
1.14	29	20	2591000
1.89	48	20	2592000



### Interconnecting/Lifting Lugs For TS/PS Enclosures

For best load distribution during transportation of interconnected enclosures.

Interconnecting/Lifting Lugs		
	Packs of	Part No.
Lifting lugs	4	4540000

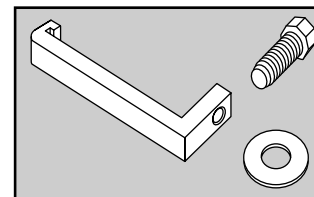


### Quick-Fit Baying Clamps For TS-to-TS

For quick on-site assembly; also suitable for temporary use in the workshop. Simply attach the screws, insert the quick-fit baying clamp, tap in with a hammer and secure.

Quick-Fit Baying Clamps For TS-to-TS	
Packs of	Part No.
6	8800500

**Material:** sheet steel, zinc-plated, chromated  
**Configuration:** 6 quick-fit baying clamps including installation hardware.



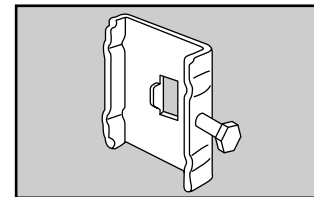
### Baying Clamp, Horizontal TS-to-TS and TS-to-PS

For mounting on the horizontal frame sections of:

- Two TS enclosures
- One TS enclosure and one PS enclosure.

Baying Clamp, Horizontal TS-to-TS And TS-to-PS	
Packs of	Part No.
4	8800400

**Material:** cast steel, zinc-plated, chromated  
**Configuration:** 4 baying clamps, including installation hardware.



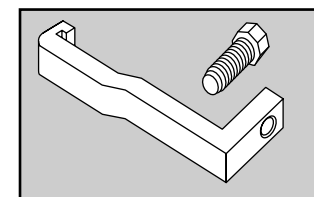
### Baying Clamp, Vertical TS-to-TS

For mounting on the vertical frame sections of two TS enclosures.

**Material:** sheet steel, zinc-plated, chromated

**Configuration:** 6 baying clamps, including installation hardware.

Baying Clamp, Vertical TS-to-TS	
Packs of	Part No.
6	8800410



### Baying Clamp, Vertical TS-to-PS

For mounting on the vertical frame sections of:

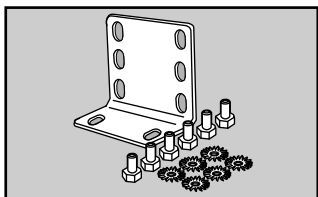
- One TS enclosure and one PS enclosure

**Material:** cast steel, zinc-plated, chromated

Baying Clamp, Vertical TS-to-PS	
Packs of	Part No.
6	8800420

**Configuration:** 6 baying clamps, including installation hardware.

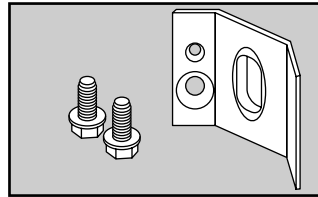
## Interconnecting Hardware



### Interconnecting Bracket For PS Enclosures

These strong angle brackets can be used to interconnect PS cabinets on the inside. Recommended for use in conjunction with PS 4580 or PS 4581 interconnecting hardware.

Interconnecting Bracket		
	Packs of	Part No.
Interconnecting bracket		
L-shape	4	4582000
Flat*	4	4582500



### Baying Connector, External For TS-to-TS

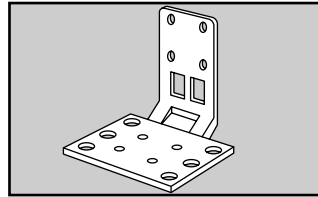
For connecting bayed TS profile from the outside.

**Installation:** simply position on the outside and screw on from either the inside or the outside

### Angular Baying Bracket TS-to-TS

The sturdy connection when transporting bayed enclosures.

**Material:** sheet steel, zinc-plated, chromated



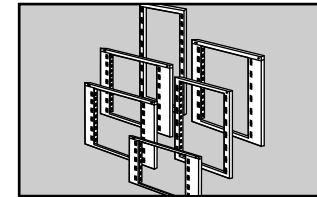
Baying Connector, External For TS-to-TS	
Packs of	Part No.
6	8800490

**Material:** sheet steel, zinc-plated, chromated

**Configuration:** 6 baying connectors, including installation hardware.

Angular Baying Bracket	
Packs of	Part No.
4	8800430

**Configuration:** 4 angular baying brackets, including installation hardware.

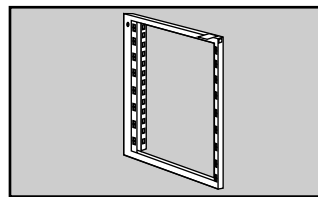


### For 24"/600 mm Wide TS/PS Enclosures

For 24"/600 mm Wide TS/PS Enclosures	
Part No.	2340700
Available rack space 1 U = 1.75"	70.0" (40 U)
H1 inches/mm	73.29"/1861.5 mm
H2 inches/mm	70.14"/1781.5 mm
Enclosure height 474"/1200 mm T = 24"/600 mm	-
Enclosure height 63"/1600 mm T = 24"/600 mm	-
Enclosure height 71"/1800 mm*	-
Enclosure height 79"/2000 mm	185
Enclosure height 87"/2200 mm	185

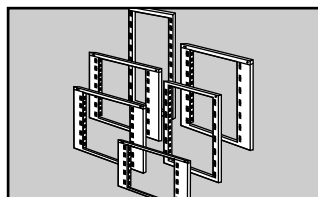
Required installation kit for all types, Part No. SR 1996 (standard hinge)  
\* also for PS 4215 and 4216.

## Swing Frames



### Compact Swing Frames For AE And AP 6 - 14 HU

6-14 U Compact Swing Frames For AE and AP						
HU	H	W	H	W	Packs of	Part No.
1 HU=1.75"	inches	inches	mm	mm		
6	12.60	21.30	320	541	1	2026200
11	21.34	21.30	542	541	1	2027200
14	26.61	21.30	676	541	1	2034200



### 3 - 18 HU Swing Frames For PS Enclosures

Swing frame pivots out of enclosure for easy access to 19" rack equipment and components mounted in the rear of the enclosure.

- Designed for 24"/600 mm, 31"/800 mm, and 47"/1200 mm wide enclosures.
- Swing frames can be installed either left, right, or both in 47"/1200 mm wide enclosures.

*Note:* for 47"/1200 mm wide enclosures the Vario Swing frames can only be installed at the top most position of the enclosure frame.

- Usable rack space from 3 to 18 HU (1HU = 1.75").
- Fixing kit is included. Additional installation accessories are required for applications where the Vario swing frame is not installed at the top most position of the enclosure frame.

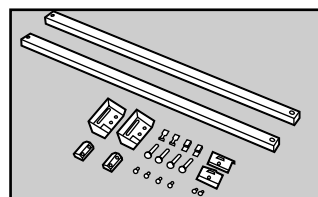
3-18 HU Swing Frames For PS Enclosures			
Part No.	2004200	2008200	2011200
Available rack space (1HU = 1.75")	10.5" (6 U)	21.0" (12 U)	31.5" (18 U)
H1	13.77" 350 mm	24.62" 616.5 mm	34.75" 883 mm
H2	10.63" 270 mm	21.11" 536.5 mm	31.60" 803 mm
Max. inst. depth D for encl. depth >	15.75"/400 mm 19.69"/500 mm	12.00"/305 mm (10.83"/275 mm) 19.94"/405 mm (14.37"/365 mm)	
Dimension (D)	inches	1.63" - 2.34" - 3.05" - 4.58" - 5.29" - 5.57" - 6.28"	
	mm	41.5 - 59.5 - 77.5 - 116.5 - 134.5 - 141.5 - 159.5	

- 130° frame rotation is standard.
- 180° frame rotation is possible for 31"/800 mm wide enclosures by using SR 2013.
- Vario swing frame can be either left or right hand hinged.
- Vario swing frames for 31"/800 mm wide enclosures are designed to be centered within the enclosure frame and have side filler panels to occupy the space between the Vario swing frame and the enclosure frame.
- Vario swing frames have one latch with double-bit insert. Latch can be positioned at the top or bottom.
- Load capacity of 15 lbs. per HU.

Mounting Kit For Small Swing Frames	
Enclosure width in inches/mm	Part No.
24/600	2377860
32/800	2377880

Mounting Kit For Small Swing Frames	
PU	Part No.
1 set	2377460

For the small galvanized swing frame into 24"/600 mm inside enclosures.



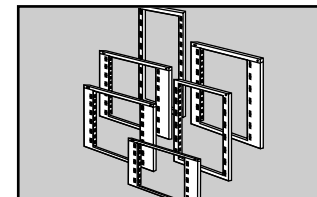
### Mounting Kit For Small Swing Frames

To match the enclosure widths 24"/600 mm and 32"/800 mm. The installation kit for 32"/800 mm wide enclosures permits central and side installation of the swing frame.

**Material:** Cross member: sheet steel, chromated  
Support bracket TS: Die-cast zinc

**Configuration:** 2 cross members, including installation hardware.

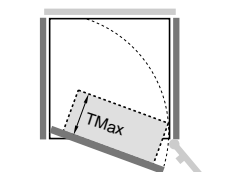
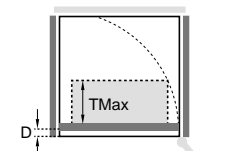
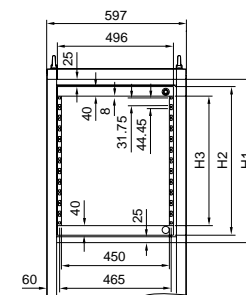
**Additional accessories:** PS system chassis without mounting flanges to match the enclosure depth.



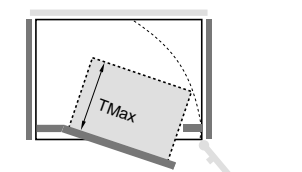
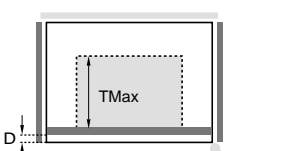
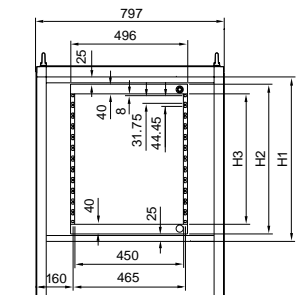
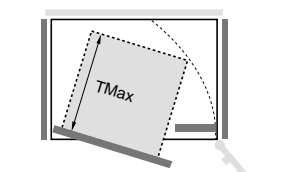
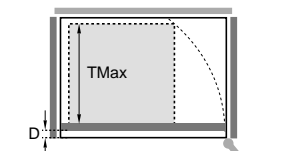
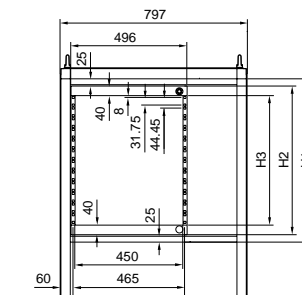
### For 24"/600 mm And 32"/800 mm Wide TS Enclosures

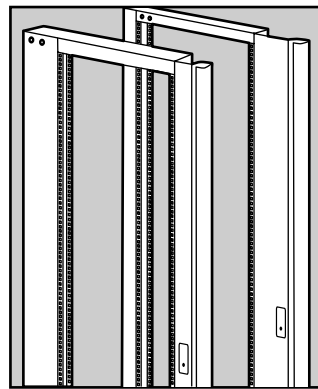
For 24"/600 mm and 32"/800 mm Wide TS Enclosures						
Part No.	2377090	2377120	2377180			
Height units	9 U	12 U	18 U			
H1 mm	541	675	941			
H2 mm	483	617	883			
H3 mm	403	537	803			
Install. pos. of slide-in equipment	Side	Center	Side	Center	Side	Center
Enclosure width (D=16/400)	-	8/185	-	8/185	-	8/185
24"/600 mm (D=20/500)	-	8/185	-	8/185	-	8/185
(D=24/600)	-	8/185	-	8/185	-	8/185
(D=32/800)	-	8/185	-	8/185	-	8/185
<b>Required installation kit SR 2377860</b>						
Enclosure width (D=16/400)	13/310	13/310	13/310	13/310	13/310	13/310
32"/800 mm (D=20/500)	17/410	15/370	17/410	15/370	17/410	15/370
(D=24/600)	20/500	15/370	20/500	15/370	20/500	15/370
(D=32/800)	20/500	15/370	20/500	15/370	20/500	15/370
<b>Required installation kit SR 2377880</b>						

#### For 24"/600 mm wide enclosures



#### For 32"/800 mm wide enclosures





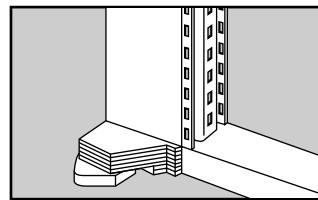
### Large Swing Frames For 32"/800 mm Wide TS/PS Enclosures

For 32"/800 mm Wide TS/PS Enclosures									
Part No.	2337200			2341200 2342200			2346200* 2347200		
Available rack space (1 U=1.75")	63.0" (36 U)			70.0" (40 U)			78.75" (45 U)		
H1 inches/mm	66.32"/1684.5 mm			73.29"/1861.5 mm			82.05"/2084.0 mm		
H2 inches/mm	63.15"/1604.0 mm			70.14"/1781.5 mm			78.90"/2004.0 mm		
Installation position	Side		Center	Side		Center	Side		Center
Opening angle in degrees	130°	180°	180°	130°	180°	180°	130°	180°	180°
Encl. height 1200 mm (D ≥ 600)	-	-	-	-	-	-	-	-	-
Encl. height 1400 mm (D ≥ 600)	-	-	-	-	-	-	-	-	-
Encl. height 1600 mm (D = 500)	-	-	-	-	-	-	-	-	-
(D ≥ 600)	-	-	-	-	-	-	-	-	-
Encl. height 1800 mm* (D = 400)	295	252	252	-	-	-	-	-	-
(D = 500)	395	352	345	-	-	-	-	-	-
(D ≥ 600)	470	428	345	-	-	-	-	-	-
Enclosure with integrated cable base* (D = 500)	-	-	-	-	-	-	-	-	-
(D ≥ 600)	-	-	-	-	-	-	-	-	-
Encl. height 2000 mm (D = 500)	395	352	345	395	352	345	-	-	-
(D ≥ 600)	470	428	345	470	428	345	-	-	-
Encl. height 2200 mm (D ≥ 600)	470	428	345	470	428	345	470	428	345
Required SR 1995	•			•			•		
Installation kit SR 1997**		•	•		•	•		•	•
24"/600 mm wide swing frames can also be installed (requires SR 1995 or SR 1997 installation kit).									
* PS 4815, 4816 ** installation kit includes 180° hinge									

Because enclosure height is not fully utilized, system rails are required for all shaded combinations. Maximum installation depth T = maximum available depth for 19" rackmount components installed in swing frame.

\*2346235 (RAL 7035 light grey)

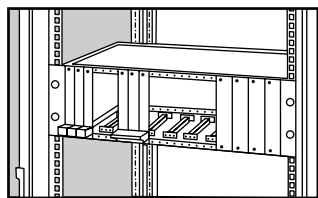
**Technical description:** sturdy, rigid steel box section frame, powder painted RAL 7032 pebble grey. 32"/800 mm wide swing frames feature a handle bar panel and a rod-type lock system.



### Installation Kit With 180° Hinge For Large Swing Frames

Ensures easy access to installed components in 32" wide enclosures.

Installation Kit With 180° Hinge For Large Swing Frames					
For enclosure		Installation on		Packs of	Part No.
Model	Width	Side	Center		
PS	32"/800 mm	•	•	1 kit	1997200



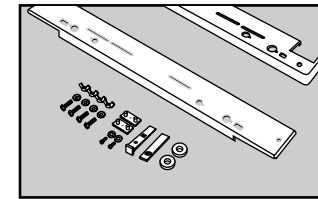
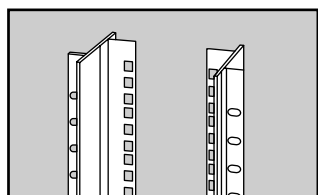
### 19" Adaptor Profile

For the installation of slide rails TS 8613150, TS 8613160 and TS 8613180 into the rear vertical profile of the TS8 electronic enclosures. The installation of individual slide rails can also be done with 19" adaptor angles TS 8613010. Installation is on the inner installation level. The outer installation level remains available for cable management or TS depth system chassis.

**Material:** aluminum extrusion  
**Finish:** conductive, corrosion resistant coating.

**Configuration:** 2 adaptor profiles (left/right), 10 sheet metal screws

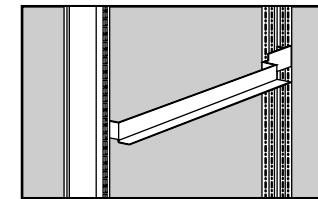
19" Adaptor Profile			
For enclosure height in inches/mm	U	Packs of	Part No.
63/1600	33	2	8613360
79/2000	42	2	8613300



### Installation Kits For Large Swing Frames

To match the enclosure widths 24"/600 mm, 32"/800 mm and 48"/1200 mm. With the installation kit for 32"/800 mm wide enclosures, the swing frame for 24"/600 mm and 48"/1200 mm can also be installed in 32"/800 mm wide enclosures, offset at the sides.

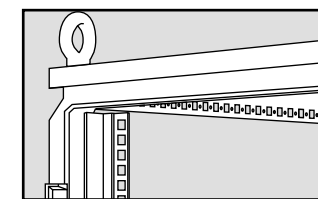
**Material:** sheet steel.



### Slide Rails

For mounting between the front and rear 19" mounting angles or 19" adaptor angles.

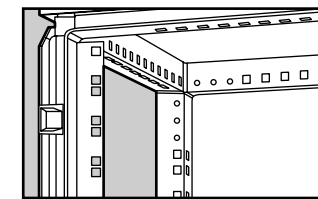
**Material:** sheet steel, zinc-plated, chromated.



### 19" Rails

Aluminum or sheet steel 19" rails punched for installation of 19" components. Can easily be installed into all 24"/600 mm wide enclosures for conversion to 19" rack.

*Note:* must order EL 2093 screws and EL 2094 nuts.



### 19" Mounting Angles For CS Enclosures

For mounting slide-in 19" electronic equipment. Easily retrofitted. Assembly parts included.

Installation Kits For Large Swing Frames			
For enclosure width inches/mm	RAL	Part No. with 130° hinge	Part No. with 180° hinge
32/800	7032	1995200	1997200
48/1200	7044	1996800	-

**Surface finish:** spray-finished — see table

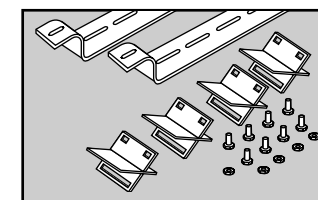
**Configuration:** installation kit for one swing frame including material for fixing to the enclosure.

Slide Rails		
For enclosure depth inches/mm	Packs of	Part No.
20/500	10	8613150
24/600	10	8613160
32/800	10	8613180

19" Rails					
U	For enclosure height		Material	Packs of	Part No.
	inches	mm			
17	Lower compartment of PC		Aluminum	4	4632000

19" Mounting Angles For CS Enclosures				
For enclosure height (mm)	Surface finish	U	Packs of	Part No.
800	Spray-finish RAL 7035	15	4	9785001
800	Zinc plated, passivated	15	4	9785002
1200	Spray-finish, RAL 7035	24	4	9785003
1200	Zinc plated, passivated	24	4	9785004

## Shelves And Accessories

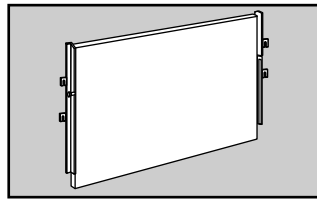


### Installation Kit For Drawers

Used to facilitate the mounting of 19" components into 24"/600 mm wide PS enclosures.

Installation Kit For Drawers				
For installation in cabinet		Packs of	Part No.	
Depth				
inches	mm			
24	600	1	4544000	





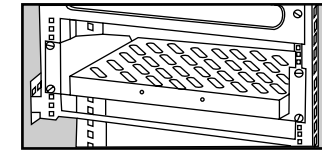
### Desk Panel For TS/PS Enclosures

Can be attached to door frames or sufficiently large surfaces. Mounted between door frame members, it takes up little space and can be easily swung out to provide a large writing/storage area.

**Material:** sheet steel

**Finish:** painted RAL 7032 pebble grey with slipfree surface.

Desk Panel For TS/PS Enclosures		
Dimensions WxD		Part No.
mm	For door width	
413x400	600	4638600
613x400	800	4638800



### 19" Component Shelves-2U

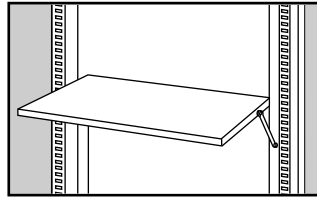
Can be installed:  
- in enclosure between 19" rails, and  
- in swing frames with special 19" angles

**Material:** sheet steel

**Color:** light grey (RAL 7035)

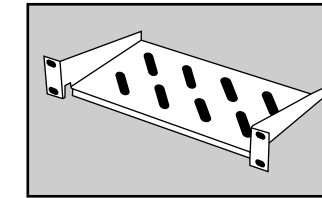
For Installation In Fixed Position Or On Telescopic Slides

19" Component Shelves-2U				Part No.
inches		mm		
W	D	W	D	
15.35	16	390	400	7119400



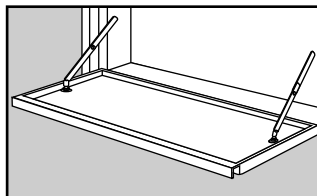
### External Fold-Up Shelf For TS/PS Enclosures

External Fold-Up Shelf For TS/PS Enclosures		
Shelf dimensions WxD		Part No.
inches	mm	
14.76 x 14.76	375 x 375	9962008



### 1/2 19" Component Shelf

1/2 19" Component Shelf		
Description	Packs of	Part No.
1/2 19" Shelf	1	7502600



### Fold-Down Keyboard Shelf For 31"/800 mm Wide Surfaces For TS/PS Enclosures

Can be retrofitted into door or side wall to integrate keyboard into enclosure.

Maximum keyboard dimensions: 21.65" x 9.45"/550 x 240 mm

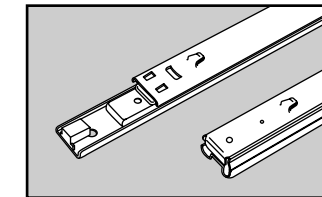
**Rating:** NEMA 12/IP 55 per EN 60529/10.91

Fold-Down Keyboard Shelf		
Keyboard shelf	Packs of	Part No.
	1	4636000

**Material:**  
*Housing:* fiberglass-reinforced plastic  
*Front panel:* 16 ga/1.5 mm sheet steel

**Configuration:** housing, front panel with 3524 E security lock insert, gasket, and installation hardware.

**US Patent No.** 5,082,336  
**German Patent No.** 39 30 188



### Telescopic Slides For Component Shelves

Slides are fully extendable, and can also be easily retrofitted to convert fixed shelf into sliding shelf.

Available in two versions:

max. load capacity: 110 lbs/50 kg  
max. load capacity: 220 lbs/100 kg

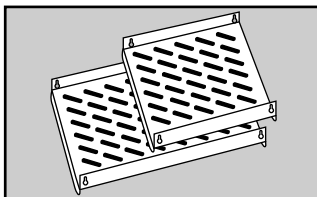
**Technical description:**

- Installation adjustable in .98"/25 mm increments

- 2-stage extension

**Material:** sheet steel, zinc-coated, chromated.

Telescopic Slides For Component Shelves			
For shelf depth	Packs of	Part No.	
		max. load capacity	
		110 lbs/50 kg	220lbs /100 kg
12"/300 mm	1 set	7051000	-
16"/400 mm	1 set	7061000	7064000
20"/500 mm	1 set	7081000	7065000
24"/600 mm	1 set	7161000	7066000



### Component Shelves For Fixed Installation In 24"/600 mm Wide PC/PS Enclosures

Are installed directly to enclosure frame - simply hang on 4 screws and tighten.

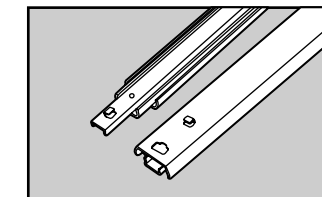
**Material:** sheet steel

**Finish:** powder coated, textured, RAL 7035 light grey

**Configuration:** complete with installation hardware.

**Accessories:** positioning bolts for vented component shelves (DK 7115.000).

Component Shelves For Fixed Installation				
For enclosure depth		Shelf area		Part No.
PC, PS				
inches	mm	inches	mm	
26	650	20.08 x 21.85	510 x 555	4619660
33	850	20.08 x 29.72	510 x 755	4619680



### Printer Carriage

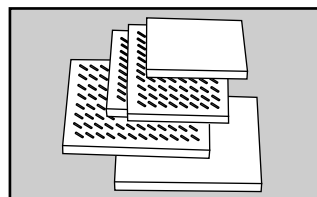
For functional housing of printer in an enclosure. Complete with telescopic slides, paper feed and storage shelves. Installation hardware included.

**Load capacity:** 55 lbs/25 kg

**Material:** sheet steel

**Color:** RAL 7032 pebble grey or RAL 7035 light grey.

Printer Carriage				
Printer size	For enclosure W x D		Packs of	Part No.
	inches	mm		
Standard	24 x 20	600 x 500	1	4635000
	24 x 24	600 x 600		
	24 x 31	600 x 800		
	31 x 24	800 x 600		
	31 x 31	800 x 800		



### Vented Component Shelves (With 19" Rail Mounting)

Can be installed in two ways

1. In fixed position, or
2. Fully extendable on telescopic slides.

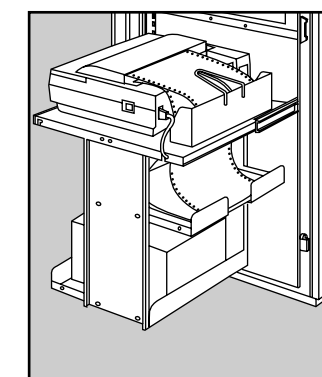
Each enclosure type requires its own specific installation kit corresponding with its width and depth.

**Load capacity:** 110 lbs/50 kg

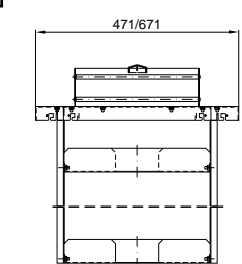
Vented Component Shelves		
Dimensions		Part No.
inches	mm	
16" x 12"	409 x 300	7143000
16" x 16"	409 x 400	7144000
16" x 20"	409 x 500	7145000
16" x 24"	409 x 600	9960935

**Configuration:**

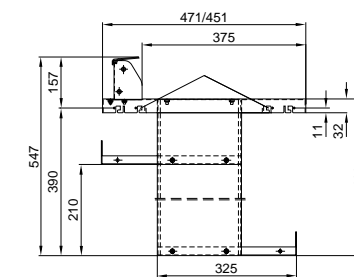
- Component shelf including installation hardware
- Sheet steel
- Painted light grey (RAL 7035) or pebble grey (RAL 7032)
- Solid or slotted to prevent heat build-up (slots accommodate DK 7115000 positioning studs).



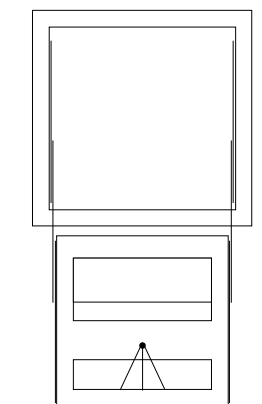
Installation Option A



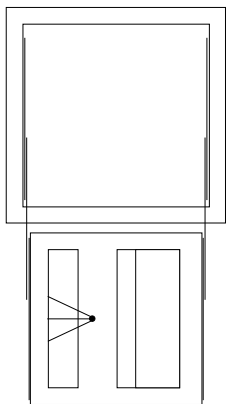
Installation Option B

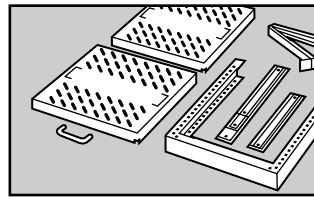


Installation Option A



Installation Option B



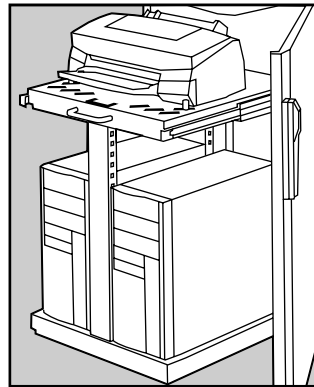


### PC Workstation Carriage

The ideal solution for accommodating two tower PCs adjacent to one another. The fully extendable telescopic rails make these units very accessible. The shelves, which are height-adjustable on a 25 mm pitch pattern, enable changes based on varying workstation configurations. On the shelf, there is plenty of space for an additional desktop PC or printer with single-sheet feed (laser, ink-jet or dot-matrix printer). With the pre-integrated, hinged cable support and mounting device for a DK socket strip DK 7240120, all the requirements are met for fast, perfect assembly.

- For installation in enclosure system PC/PS/TS with width 24"/600 mm and depth 24"/600 (32"/800 mm).
- Workstation carriage can be rotated 90°
- Equipment may be positioned and fixed with fixing bolts DK 7115000.

**Load capacity:** 165 lbs/75 kg  
**Material:** sheet steel



PC Workstation Carriage	
Packs of	Part No.
1	4641000

**Color:** RAL 7035

**Configuration:**

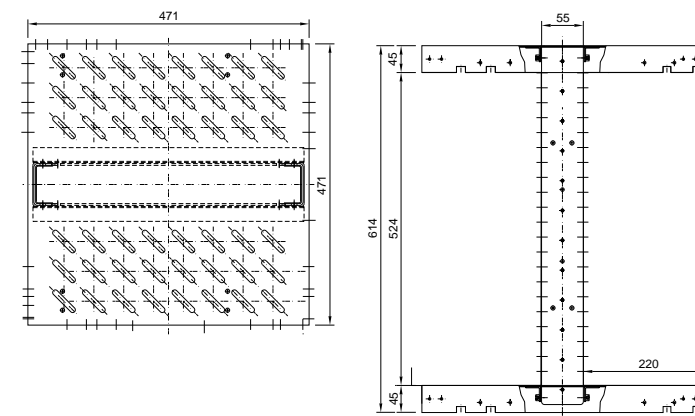
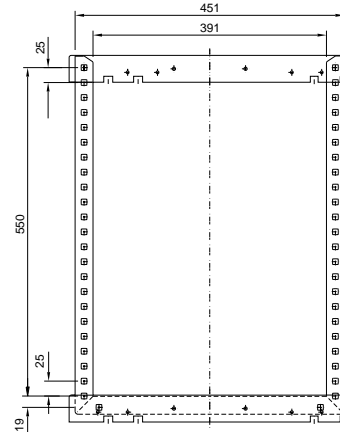
- Mobile workstation consisting of:
- 1 frame
- 2 shelves, top/bottom
- 1 set of telescopic slides
- 1 handle
- 1 cable support, hinged
- Installation hardware

**For installation in PC/PS 24"/600 mm (32"/800 mm) deep, the following accessories are required:**

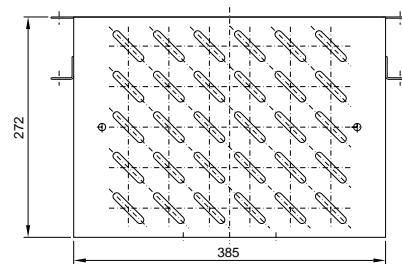
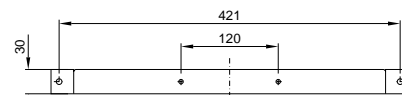
- 2 system chassis PS 4376000 (PS 4377000). Support bracket PS 4183000. Threaded blocks PS 4162000.

**For installation in TS 24"/600 mm (32"/800 mm) deep, the following accessories are required:**

- 2 system chassis TS 8612060 (TS 8612080).



Shelf For PC Workstation Carriage	
Packs of	Part No.
1	4642000



### Shelf For PC Workstation Carriage

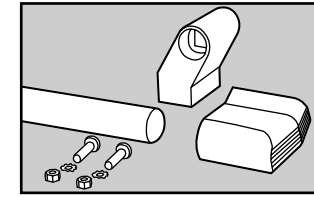
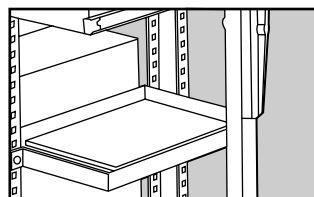
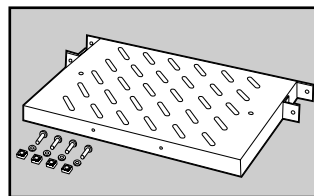
To accommodate additional equipment such as modems, power packs etc. or simply as a paper tray. Additional equipment may be positioned and fixed with fixing bolts DK 7115000.

- The shelf may be attached to the PC workstation carriage on a 25 mm pitch pattern. With two additional shelves, these should be fitted vertically offset by 50 mm.

**Material:** sheet steel

**Color:** RAL 7035

**Configuration:** shelf including installation hardware.



### Handle Set

For vertical and horizontal mounting on all surfaces. Overall length: 17.7"/480 mm

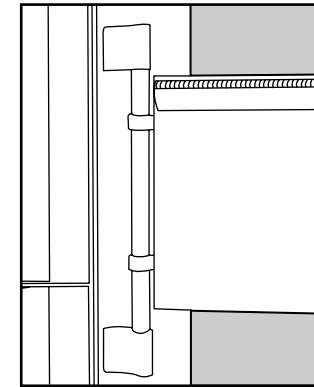
**Accessories:**

- Clip board CP 6013000
- Ring board CP 6013500

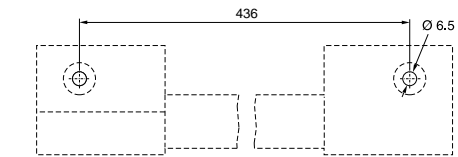
**Material:**

Handle holder: zinc die-cast, RAL 7035.  
Handle tube: aluminum, natural anodized.

**Configuration:** 4 handle holders, 2 handle tubes, installation hardware.



Handle Set	
Packs of	Part No.
1 set	4633000

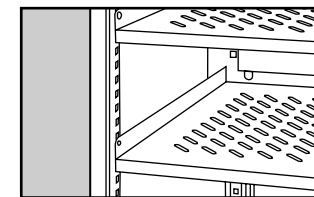


### PC Desktop Shelf

For the installation without additional rails, behind the folding keyboard. Slotted version for good air circulation. Height clearance for PCs approx. 9.1"/230 mm. Including installation hardware.

**Material:** sheet steel

**Color:** RAL 7035.



### NEMA 6/IP 67 Mouse/Mouse Pad

An ideal input device for all areas where heavy contamination is unavoidable, or where high standards of hygiene are crucial. Because the mouse detects positions inductively, there is no need for a trackball, and the housing is completely sealed with a protective film. This achieves a high protection category of NEMA 6/IP 67.

The mouse operates in conjunction with the inductive mouse pad NEMA 6/IP 67 and is available for connection to either a COM or a PS/2 interface.

**Material:**

Mouse pad: plastic PBT

Mouse: plastic ABS

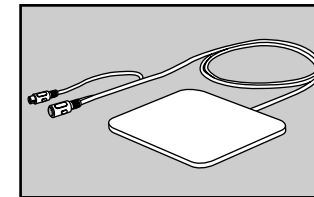
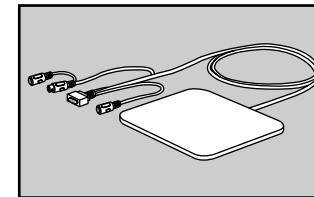
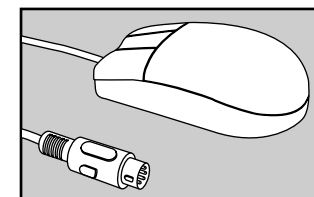
**Color:**

Mouse pad: similar to RAL 7032 grey

Mouse: similar to RAL 7032 grey

**Technical specifications:**

NEMA 6/IP 67 mouse



PC Desktop Shelf		
		Part No.
For PC enclosure	PC 4603920	4629660
	PC 4609920	4629680*
For PC desktop	PC 4617920	4629660

\* Extended delivery times.

NEMA 6/IP 67 Mouse/Mouse Pad				
Part No.	Description	H x W x D inches	H x W x D mm	Packs of
6444000	Inductive mouse pad IP 67 COM interface	8 x 10 x .6	205 x 250 x 15	1
6444500	Inductive mouse pad IP 67 PS/2 interface	8 x 10 x .6	205 x 250 x 15	1
6445000	Mouse NEMA 6/IP 67 for COM and PS/2 interface	-	-	1

Mouse connector: DIN 7-pole

**Mouse pad COM interface**

Mouse pad—PC connection: 9-pole D-SUB socket DIN 5-pole connector

**Mouse pad PS/2 interface**

Mouse pad -PC connection: PS/2 connector

**Temperature range:**

32°F to 131°F/0°C to 55°C

Power consumption: < 20 mA

Pad size (H x W x D):

8" x 10" x .6"/205 x 250 x 15 mm

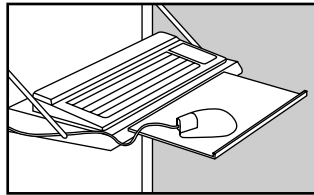
IP 67/NEMA 6

Cable lengths: 2,000 mm

Runs under DOS, Windows 3.1/3.11, Windows 95/98, Windows NT

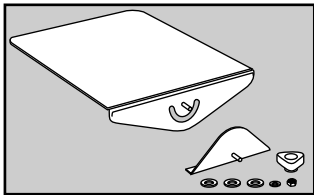
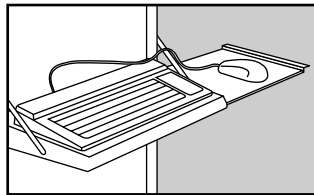
**Ratings:**  IP 67/NEMA 6.





### Mouse Pad

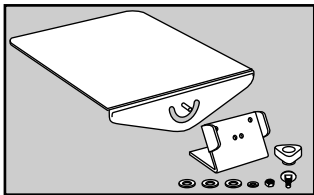
Can be installed in PC enclosures with keyboard drawer or shelf. Pulls out to right or left side (drawer) or front (shelf). Complete with self-adhesive pad covering and installation hardware.



### Mouse Pad Tray For Desk Consoles

Can be mounted on operator interface enclosures with a desk console (ie PC) or on other AP Series consoles for accommodation of SM 6444.000 and SM 6444.500 NEMA 6/IP 67 mouse pads. The slope of the mouse pad tray can be infinitely adjusted. Installation requires drilling two installation holes in the console.

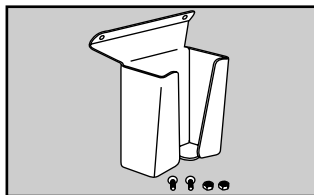
**Material:** sheet steel, chromated  
**Configuration:** mouse pad tray, installation hardware.



### Mouse Pad Tray

Is mounted on vertical handles of keyboard housings for accommodation of SM 6444.000 and SM 6444.500 NEMA 6/IP 67 mouse pads. The slope of the mouse pad tray is infinitely adjustable. Installation requires drilling two installation holes in the handle grip brackets.

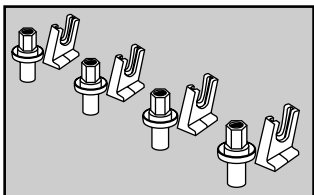
**Material:** sheet steel, chromated  
**Configuration:** mouse pad tray, installation hardware.



### Mouse Holder

Fits Rittal mouse pad trays to ensure safe storage of a standard mouse or the Rittal SM 6445.000 NEMA 6/IP 67 mouse.

**Material:** sheet steel, chromated  
**Configuration:** mouse holder, installation hardware.



### Mounting Kit For Threaded Bolts

For fastening:

- aluminum front panels with studs
- control panels with studs
- keyboards with studs.

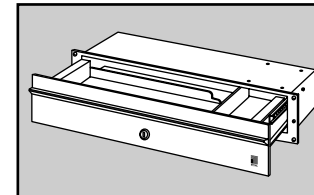
Mouse Pad	
For enclosure	<b>Part No.</b>
PC fold-down with keyboard shelf	<b>4613000</b>
PC pull-out with keyboard drawer	<b>4614000</b>

Mouse Pad Tray For Desk Consoles		
For	Packs of	<b>Part No.</b>
PC 4603.704 AP Series consoles	1	<b>2380000</b>

Mouse Pad Tray		
Description	Packs of	<b>Part No.</b>
Mouse pad tray	1	<b>2381000</b>

Mouse Holder	
Packs of	<b>Part No.</b>
1	<b>2382000</b>

Mounting Kit For Threaded Bolts	
Thread	<b>Part No.</b>
M4	<b>6058500</b>
M5	<b>6053500</b>



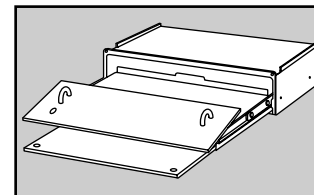
### Keyboard Drawer 19"/2 U

Can be mounted in all 19" systems or on any sufficiently large surface (door, side wall, etc.). Its low weight (5.5 lbs/2.5 kg) makes it ideal for use in support arm systems because adequate room remains for cabling, even when the support arm is connected from below. It can also be locked with a 3524 E lock.

High mechanical protection and shielding is maintained, even when the drawer is open.

#### Technical data:

- Total available space: 15.35"x1.26"x5.47"/390x32x139 mm
- Drawer has 2.36"/60 mm high space on right for a mouse or trackball or for a 3-1/2" disk drive.
- When a mouse is used or when a 3-1/2" drive is installed, only enough space remains for an 11.2"/284 mm wide keyboard.



### Keyboard Drawer With Mouse Pad

With 19"/3 U front panel for installation on all sufficiently large surfaces (door, side wall, etc.).

#### Technical data:

- Accepts keyboards up to HxWxD = 1.65"x18.11"x6.69"/460x42x170 mm
- Storage area for mouse under side of keyboard
- Front pull-out mouse pad.

Keyboard Drawer 19"/2 U			
Height	Width	Depth	<b>Part No.</b>
2 U	19"/482.6 mm	5.90"/150 mm	<b>6002200</b>

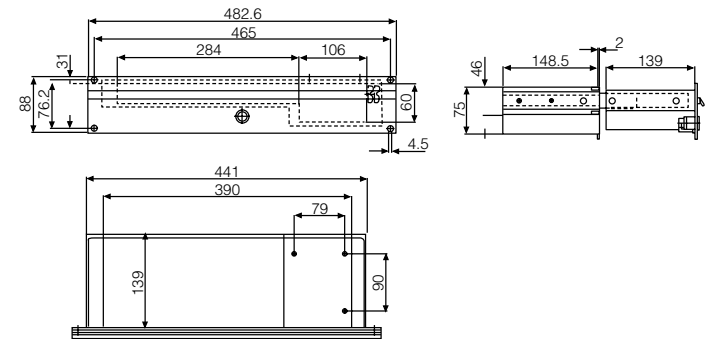
#### Material:

*Frame:* sheet steel, zinc-plated, chromated

*Drawer housing and drawer:* aluminum

*Front panel and handle:* aluminum, natural anodized

**Configuration:** Drawer housing with stops for 'open' position, front panel with handle, gasket and installation hardware.



Keyboard Drawer With Mouse Pad			
Height	Width	Depth	<b>Part No.</b>
3 U	19"/482.6 mm	232 mm	<b>6003000</b>

#### Material:

- Front panel:
  - reversible, for track ball
  - lockable, No. 3542 E insert
  - features grip

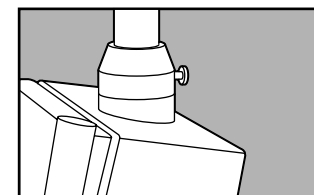
- High protection rating and EMC shielding is maintained, even when drawer is open.

*Mounting frame:* steel, zinc-coated, chromated

*Keyboard housing and tray:* aluminum

*Front panel and grip:* aluminum, natural anodized.

## Stainless Steel CP Accessories



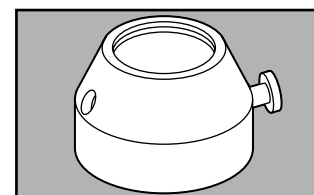
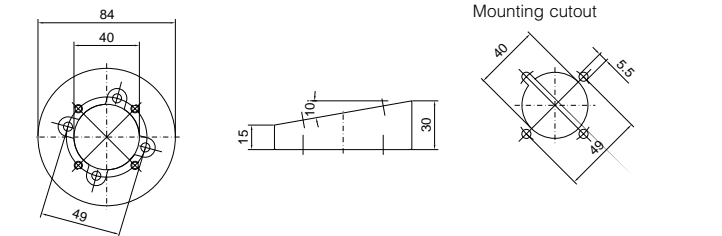
### Tilting Adaptor, 10°, Stainless Steel

To adjust the enclosure tilt for increased user-friendliness. For mounting between:

- Housing coupling CP 6664000 and the Command Panel.

**Configuration:** Type 304 stainless steel, adaptor including seal and assembly parts. Not suitable for use as a base point for a support arm system.

Tilting Adaptor, 10°	
Weight	<b>Part No.</b>
1.5 lbs/0.7 kg	<b>6664100</b>



### Enclosure Coupling, Rotating

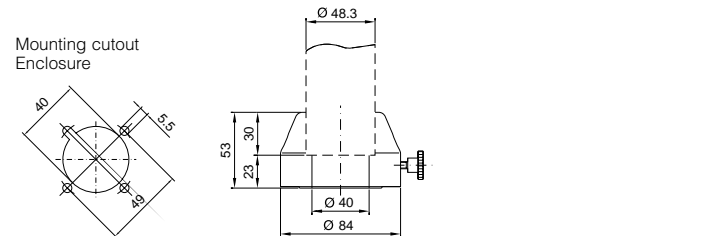
For swivel mounting of the enclosure to the vertical part of the support arm system, with the enclosure either suspended or top-mounted.

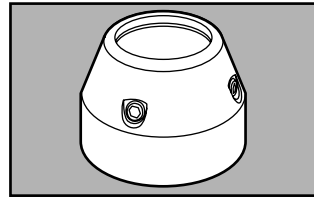
**Configuration:** Rotation range approx. 350°. Type 304 stainless steel, including seals and assembly parts. Not suitable for use as a base point for a support arm system.

#### Supply includes:

Enclosure coupling, 2 assembly screws for support section, 4 assembly screws for enclosure.

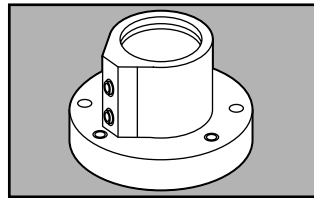
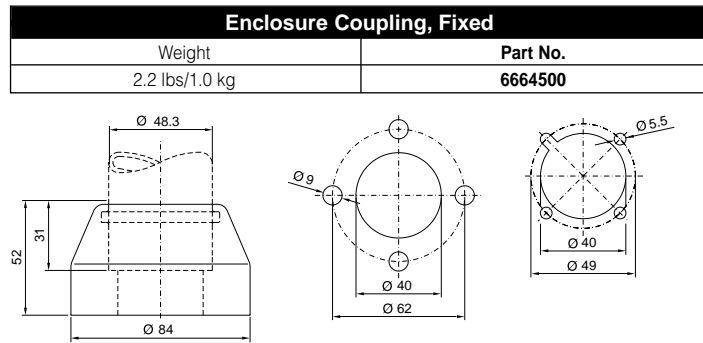
Enclosure Coupling, Rotating	
Weight	<b>Part No.</b>
2.4 lbs/1.1 kg	<b>6664000</b>





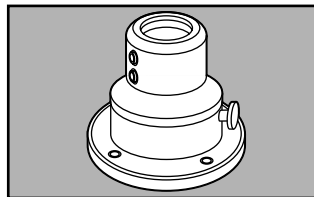
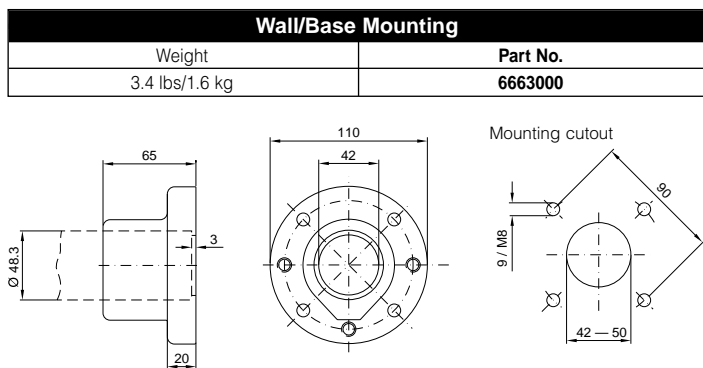
### Enclosure Coupling, Fixed

For rigid top or bottom mounting of enclosure for vertical support arms.  
**Material:** Type 304 stainless steel.



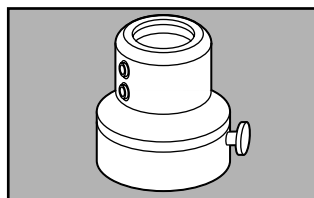
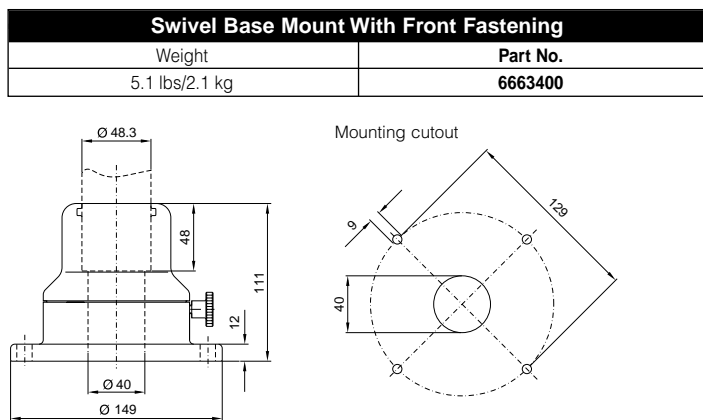
### Wall/Base Mounting

For rigid attachment of the support arm system to vertical or horizontal surfaces.  
**Configuration:** Type 304 stainless steel, including seals and assembly screws.  
**Supply includes:** Wall/base mounting, 2 assembly screws for support section, 3 adjusting screws.



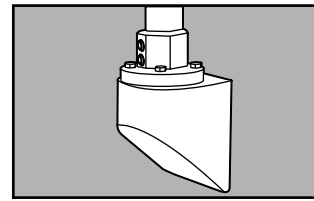
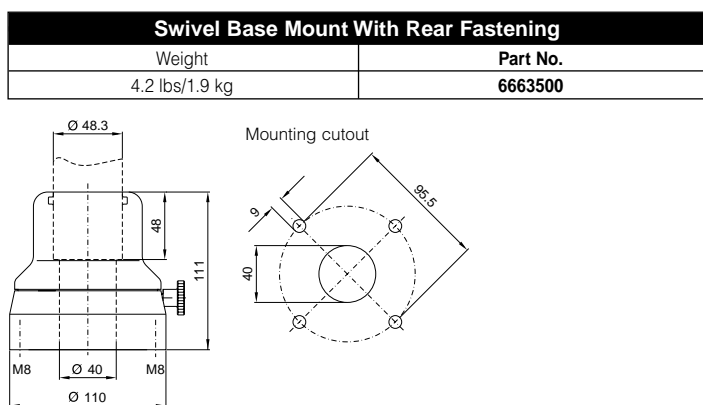
### Swivel Base Mount With Front Fastening

For swivel mounting of the support arm system on horizontal surfaces. Front fastening via flange. Rotation range approximately 350°, stepped in 60° increments.  
**Material:** Type 304 stainless steel  
**Supply includes:** Base mount, 2 assembly screws for support section.



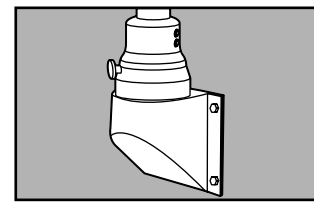
### Swivel Base Mount With Rear Fastening

For swivel mounting of the support arm system on horizontal surfaces. Internal fastening via 4 holes with an M8 thread. Rotation range approximately 350°, stepped in 60° increments.  
**Material:** Type 304 stainless steel  
**Supply includes:** Base mount, 2 assembly screws for support section.



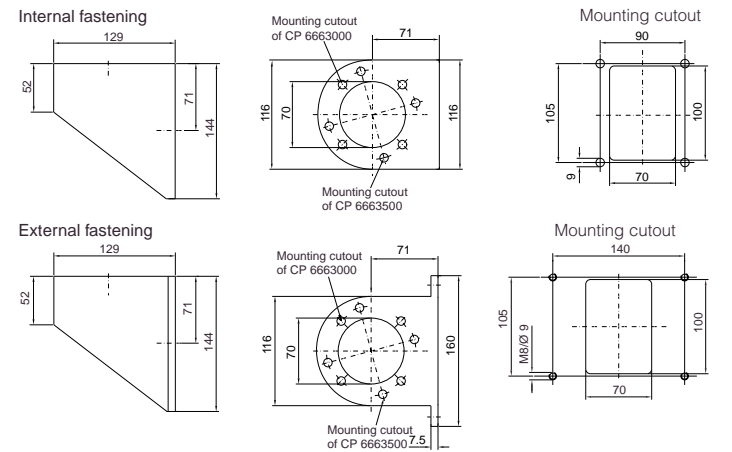
### Wall Bracket, Stainless Steel

To secure the support arm system with:  
 • Wall/base mounting (CP 6663000) or  
 • Swivel base mount (CP 6663500) on all vertical surfaces

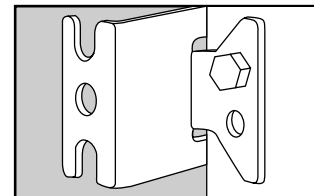


Internal and external surface with cutout for cable entry.  
**Mounting:**  
 • External fastening via 4 through-holes with a diameter of 9 mm in the flange  
 • Internal fastening via 4 threads, M8, in the rear panel.  
**Material:** Type 304 stainless steel  
**Surface finish:** Brushed  
**Supply includes:** Wall bracket, sealing material, 4 assembly screws with nuts (for CP 6663000) and 4 assembly screws (for CP 6663500).

Wall Bracket, Stainless Steel		
Wall bracket with	Weight	Part No.
Internal attachment	3.2 lbs/1.5 kg	6665000
External attachment	4.1 lbs/1.8 kg	6665500



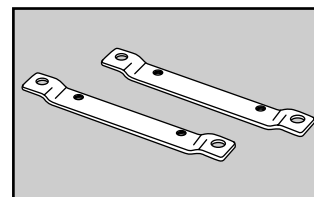
## General Accessories



### Wallmount Brackets

All KL, EB, BG, AE, Legacy wallmounts and EL enclosures utilize pre-drilled holes in rear wall. Version with 1.6"/40 mm stand-off allows cable routing behind the enclosure.  
**Material:** steel, chromated.

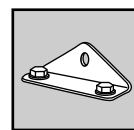
Wallmount Brackets		
Stand-off Dimension A	Packs of	Part No.
1.6"/40 mm	1	2503000
.4"/10 mm	1	2508000



### GA Wallmount Brackets

For external mounting to surfaces; installs directly to rear of enclosure - no need to remove lid.  
**Material:** sheet steel, zinc-plated, passivated.

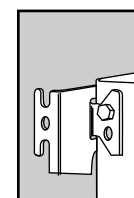
Wallmounting Brackets		
For enclosure	Packs of	Part No.
GA 9108210	2	9121122
GA 9110210		
GA 9111210		
GA 9112210	2	9121160
GA 9113210		
GA 9119210	2	9121230



### Wall Brackets For KL/EB/AE/KS Enclosures

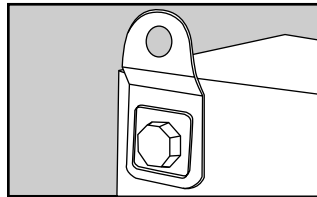
Fasten enclosure securely to wall.

Wall Brackets				
For enclosure type	Stand-off from wall (inches/mm)	Material	Packs of	Part No.
AE SS/Legacy	Flush	T 304 stainless steel	1	2583000



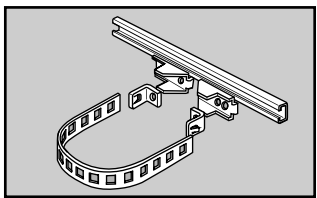
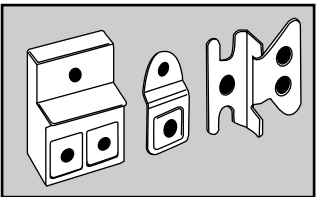
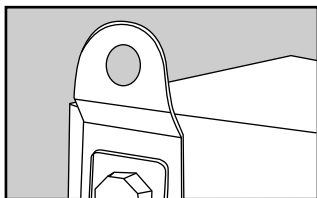
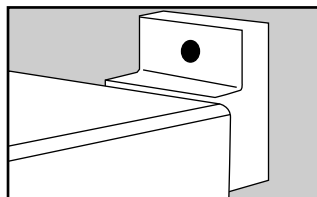
Wall Brackets				
For enclosure type	Stand-off from wall (inches/mm)	Material	Packs of	Part No.
AE/Legacy	1 5/8/40	Zinc coated steel	4	2503200
AE/Legacy	3/8/10	Zinc coated steel	4	2508200





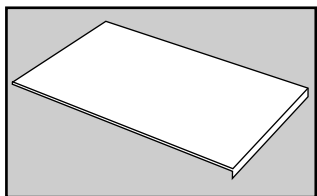
### Wall Brackets For KL/EB/AE/KS Enclosures

Fasten enclosure securely to wall.



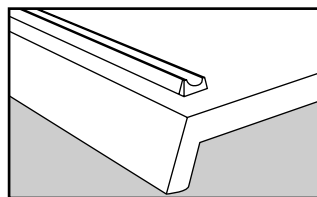
### Pole Mounting Kit

For standard wallmount enclosures up to 24" wide. Kit consists of 2 cross rails, 4 clamps, 2 straps and installation hardware.



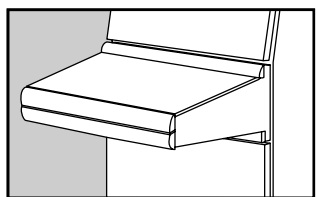
### Lids/Covers For AP Consoles

Can cover both bottom consoles and center section.



### Pencil Ledge For AP Consoles

Prevents pencils and paper from sliding off the console lid.



### Console

For installing display and control components. Removable cover plates top and bottom.

#### Material:

Desk section and cover plates: sheet steel

Trim strips: aluminum

Color: textured RAL 7032

Trim strips: RAL 5018.

Wall Brackets				
For enclosure type	Stand-off from wall (inches/mm)	Material	Packs of	Part No.
EB/KL	5/16/8	Nickel plated brass	4	1580000
EB/KL	5/16/8	Zinc coated steel	4	1590000

Wall Brackets				
For enclosure type	Stand-off from wall (inches/mm)	Material	Packs of	Part No.
KS	Flush	Fiberglass reinforced polyimide	4	1483000

Wall Brackets				
For enclosure type	Stand-off from wall (inches/mm)	Material	Packs of	Part No.
EB/KL S/S	5/16/8	T 304 stainless steel	4	1594000

Wall Brackets				
For enclosure type	Stand-off from wall (inches/mm)	Material	Packs of	Part No.
AE SS/Legacy	3/8/10	T 304 stainless steel	4	2433000

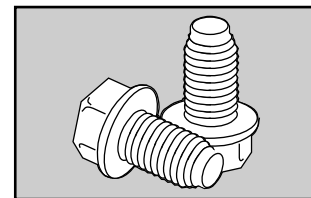
Pole Mounting Kit			
	Packs of	Part No.	Fits
Pole mounting kit	1 kit	2584000	AE, KL

Lids/Covers For AP Consoles				
Width x Depth		Packs of	Part No.	Fits
inches	mm			
31.50x15.55	800x395	1	2615200	AP 2600, 2611
31.50x19.49	800x495	1	2616200	AP 2610, 2613
47.24x15.55	1200x395	1	2645200	AP 2620, 2641
47.24x19.49	1200x495	1	2646200	AP 2640, 2643
62.99x19.49	1600x495	1	2656200	AP 2650, 2653

Pencil Ledge		
Packs of	Part No.	Fits
3	2676000	AP 2666
3	2678000	AP 2611, 2613, 2668
3	2680000	AP 2670
3	2682000	AP 2641, 2643, 2672

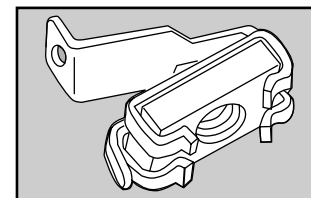
Console	
Height (mm)	Part No.
200	2696200

**Supply includes:** console, 2 cover plates, 3 trim strips, including installation hardware.



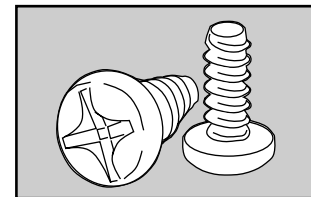
### Hexhead Bolts

For use with slide nuts, cagenuts, and self-retaining cage nuts.



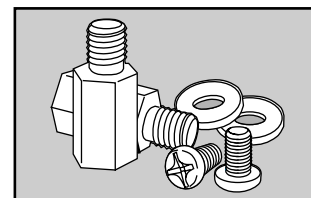
### Self-Retaining Cage Nut

With a compression spring that helps positioning of cage nut.



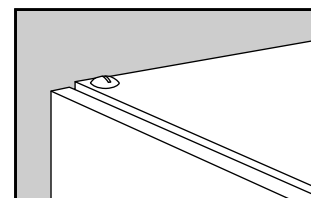
### Screw BZ 5.5x13

Fit standard PS system holes.



### Spacers For PS Roof

Raises roof for ventilation.

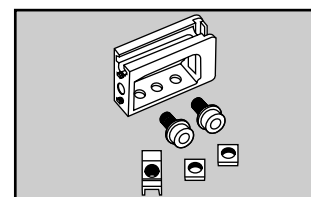


### Roof Fixing Screw For PS Enclosures

For screw-fixing the roof plate instead of eyebolts.

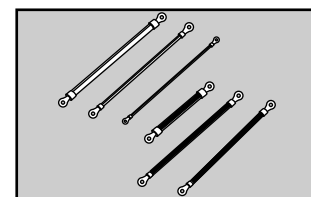
#### Material:

Sheet steel, zinc-plated, passivated.



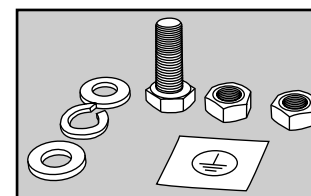
### RAB-Rapid Assembly Bracket

The new rapid assembly bracket offers many individual installation solutions in all enclosures with the standard system hole pattern. Includes installation hardware.



### Grounding Straps

Choose from 6 ready-to-use grounding straps in different lengths and thicknesses. For M6 and M8 screws.



### Screws For Grounding Straps

Includes screws and washers.

Hexhead Bolts		
Thread	Packs of	Part No.
M6x12	50	9962544
M8x12	50	9962545

Self-Retaining Cage Nut		
Thread	Packs of	Part No.
M6	50	4164000
M8	50	4165000

Screw BZ 5.5x13		
Packs of	Part No.	
300	2486000	

Spacers For PS Roof			
Height		Packs of	Part No.
inches	mm		
.8	20	4	2423000

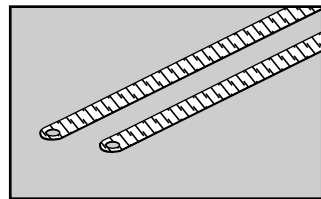
Spacers For PS Roof		
Packs of	Part No.	
20	4198000	

Rapid Assembly Bracket		
	Packs of	Part No.
RAB	12	4133000

Grounding Straps				
Wire size		Packs of	Part No.	
AWG	ø		7" long	12" long
11	4 mm <sup>2</sup>	5	2564000	2567000
5	16 mm <sup>2</sup>	5	2565000	2568000
3	25 mm <sup>2</sup>	5	2566000	2569000

Screws For Grounding Straps		
Thread	Packs of	Part No.
M6	10 sets	2570000
M8	10 sets	2559000

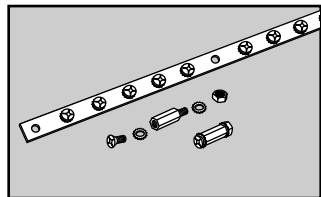




### EMC Grounding Strap

Grounding strap, tin-plated copper, with press fitted contact rings. Grounding straps have far lower inductivity compared with round conductors, and also offer highly flexible connection facilities.

EMC Grounding Strap				
For	Cross-section AWG/mm <sup>2</sup>	Length inches/mm	Packs of	Part No.
M6	7/10	8/200	10	2412210
M8	5/16	8/200	10	2412216
M8	3/25	8/200	10	2412225
M6	7/10	12/300	10	2412310
M8	5/16	12/300	10	2412316
M8	3/25	12/300	10	2412325



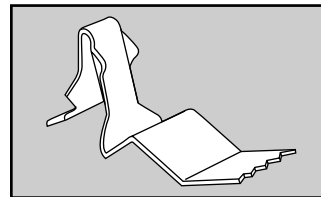
### EMC Shield Bus

EMC shield bus of chromated steel strip, 75 mm<sup>2</sup> cross section, for cable shield contact. 10 (16) connections for cable shield contact.

#### Configuration:

- 1 Shield bus
- 2 (3) Cheese-head screws M6 x 12 mm,
- 2 (3) M-6 nuts
- 4 (6) Serrated lock washers,
- 2 (3) Spacer bolts
- For SZ 2413.550

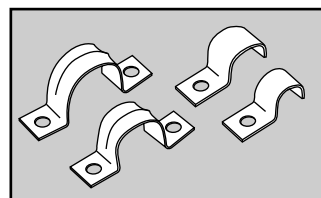
EMC Shield Bus			
Rail length		Packs of	Part No.
inches	mm		
15	375	1	2413375
22	550	1	2413550



### EMC Contact Clips For PS Enclosures

The easiest, fastest and most economical way to achieve grounding and EMC protection.

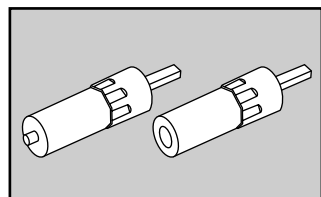
EMC Contact Clips				
EMC contact clip for	Part No.	Packs of	Increased attenuation	Grounding (equipotential bonding)
Mounting panel	4334000	50	•	•
Bottom panel	4313000	50	•	•
Roof, side/rear wall	4312000	50	•	•



### EMC Grounding Clamps

EMC grounding clamps to DIN 72 571 of sheet steel, for fastening to EMC shield bus SZ 2413.375 and SZ 2413.550. The clamps can also be used directly on the consumer or operating equipment on the mounting panel, for shielding purposes.

EMC Grounding Clamps		
Size	Packs of	Part No.
inches		
.24	50	2367060



### EMC Grounding Preparation Tool

Allows proper EMC preparation of contacts for braided ground straps etc.

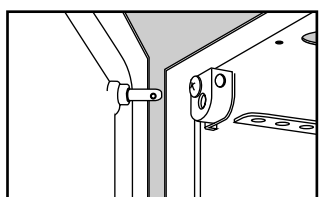
- On the PS frame through wire brush with guide pin for automatic drilling
- On grounding bolts through wire brush with hole

Has mandrel for drill, grinder, etc.

EMC Grounding Preparation Tools	
	Part No.
For frame	2414000

**Material:** wire brush in plastic holder

**Configuration:** 1 wire brush with guide pin or hole.

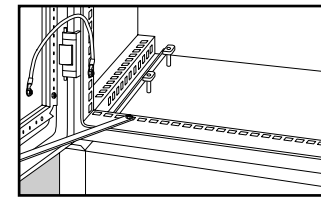


### Quick Release Fastener

Saves time during inspection and maintenance. Fits into holes in cover and housing bracket. No drilling required.

US Patent No. 4,550,852

Quick Release Fastener		
	Packs of	Part No.
Fastener	12	1593000

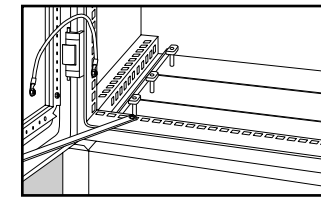


### One-Piece Gland Plates

For sealing the base opening and for cable entry.

**Material:** unpainted aluminum, 2 mm.

One-Piece Gland Plates		
For enclosure dimensions W x D (mm)	Packs of	Part No.
600 x 400	1 set	9785017
600 x 500	1 set	9785020
800 x 400	1 set	9785018
800 x 500	1 set	9785019
1200 x 400	1 set	2 x 9785017
1200 x 500	1 set	2 x 9785020

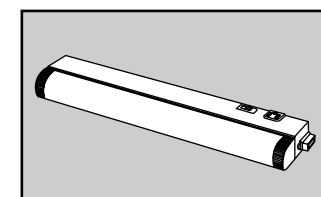


### Gland Plates, Divided

For sealing the base opening and for cable entry.

**Material:** unpainted aluminum, 2 mm.

Gland Plates, Divided		
For enclosure dimensions W x D (mm)	Packs of	Part No.
600 x 400	1 set	9785011
600 x 500	1 set	9785014
800 x 400	1 set	9785012
800 x 500	1 set	9785013
1200 x 400	1 set	2 x 9785011
1200 x 500	1 set	2 x 9785014



### Enclosure Lights

Rittal's new fluorescent enclosure lights are designed for quick and easy installation. The external terminal block means no need to disassemble the light to make electrical connections. Available in 15 or 18 watt rating, they can be used with or without the Rittal 4127.000 door switch. Equipped with interference suppression capacitor or a RFI filter they also come with or without a lamp shade or 115 V U.S. style receptacle.

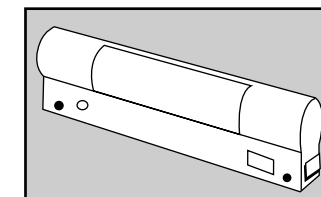
#### Advantages:

- Low profile for space efficiency
- Quick and easy installation
- Simple external electrical connections
- With or without 120 V U.S. receptacle

Enclosure Lights			
Part No.		Installation length A	Technical data
With interference suppression capacitor and no receptacle or shade	With RFI filter, U.S. receptacle and lamp shade		
9968108	9968111	18.3"/467 mm	15 W, 120 V, 60 Hz
9968109	9968112	24.41"/620 mm	18 w, 120 V, 60 Hz

- With or without lamp shade
- Interference suppression
- UL and CSA approvals
- Rating: 120 V, 60 Hz
- Color: RAL 7044
- Lights medium: cool white
- Includes installation hardware
- Connection terminals: L1, N, Gnd
- Suppression capacitor or RFI filter
- UL recognized for Canadian and U.S. requirements
- On/off rocker switch
- Clear lamp shade option
- U.S. receptacle option.

Universal Lights			
Technical Data	Socket	Installation Length	Part No.
26W, 110-240 V, 50-60Hz	Yes	475 mm	4155100
26W, 110-240 V, 50-60Hz	No	475 mm	4155000

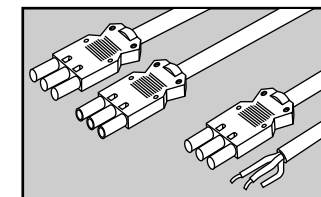


### Universal Lights

Features motion activated light, directional light cover and Rittal's new connection technology. Light is also dual rated for voltage and frequency.

**Color:** RAL 7032 pebble grey

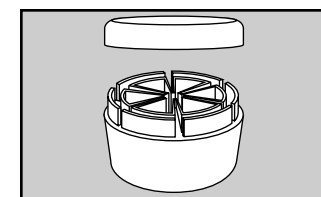
**Light:** universal white



### Connection Accessories

Can be used for time saving and easy connection of enclosure lights.

Connection Accessories				
Description	Packs of	Cable length		Part No.
		inches	mm	
Connection cable for power supply	5	78	3000	4315100



### Connection Components With Cover

Choose from conduit mounting or wall/base installation units. Screw terminals are in the connection component. Contact hazard protection to VDE.

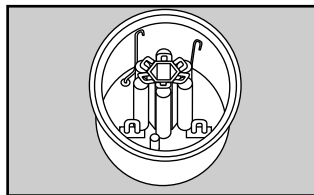
**Material:** enclosure of polyamide

**Ratings:** NEMA 12/IP 54

**Color:** black

Connection Components With Cover	
Connection components with cover	Part No.
For conduit mounting	2368000
For wall/base mounting	2368010





### Optical Components

With 360° signal emission through optimized prism technology. The optical components may be mounted at any point on the pillar. Number of possible stages = 5 components of equal voltage. Bayonet fastening, B 15d, for incandescent lamps up to a maximum of 7 W.

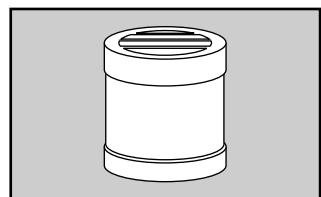
**Material:**  
*Enclosure:* polyimide  
*Cap:* transparent polycarbonate  
**Ratings:** NEMA 12/IP 54 when end cover or audible components are mounted.  
**Configuration:** optical component including gasket (light bulbs not supplied).

Optical Components					
Color	Red	Green	Yellow	Clear	Blue
Optical components					<b>Part No.</b>
Continuous light component 12-240 V AC/DC	<b>2369000</b>	<b>2369010</b>	<b>2369020</b>	<b>2369030</b>	<b>2369040</b>
Flashing light component 24 V AC/DC, 125 mA/225 mA	<b>2370000</b>	<b>2370010</b>	<b>2370020</b>	<b>2370030</b>	<b>2370040</b>
Flashing light component 230 V AC, 15 mA	<b>2370050</b>	<b>2370060</b>	<b>2370070</b>	<b>2370080</b>	<b>2370090</b>
Strobe light component 24 V AC/DC, 125 mA/225 mA	<b>2371000</b>	<b>2371010</b>	<b>2371020</b>	<b>2371030</b>	<b>2371040</b>
Strobe light component 230 V AC, 15 mA	<b>2371050</b>	<b>2371060</b>	<b>2371070</b>	<b>2371080</b>	<b>2371090</b>
LED continuous light component 24 V AC/DC, 60 mA	<b>2372000</b>	<b>2372010</b>	<b>2372020</b>	<b>2372030</b>	<b>2372040</b>

### Light Bulbs

Light bulbs for optical components with bayonet fastening, B 15d, for new orders and spares.

Light Bulbs		
Light bulb	Packs of	Part No.
24 V, 5 W	3	<b>2374060</b>
230 V, 5 W	3	<b>2374070</b>

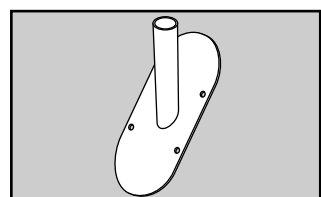


### Audible Components

To indicate warnings or malfunctions. Either a continuous or a pulsating tone may be selected. The sound pressure is 85 dB/100 dB.

**Material:**  
*Enclosure:* polyamide  
**Color:** black  
**Configuration:** audible component including gasket.

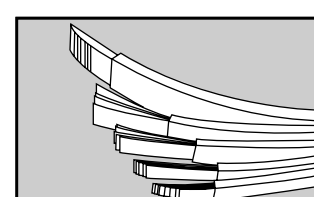
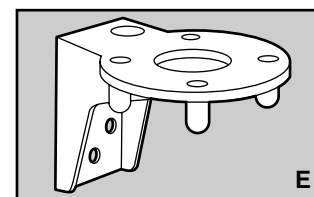
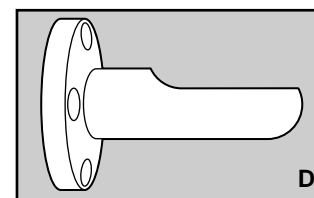
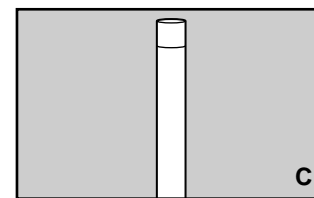
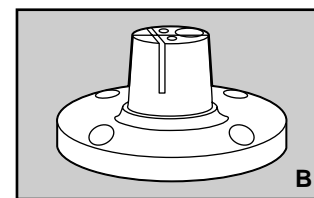
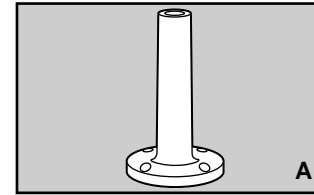
Audible Components		Part No.
Audible components		
85 dB max. 25 mA		<b>2376000</b>
100dB max. 25 mA		<b>2376000</b>



### Mounting Component For Support Arm System

For mounting a signal pillar with connecting component for conduit mounting on support arm system CP 6500. To fit angle piece CP 6524000 and enclosure coupling CP 6526000.

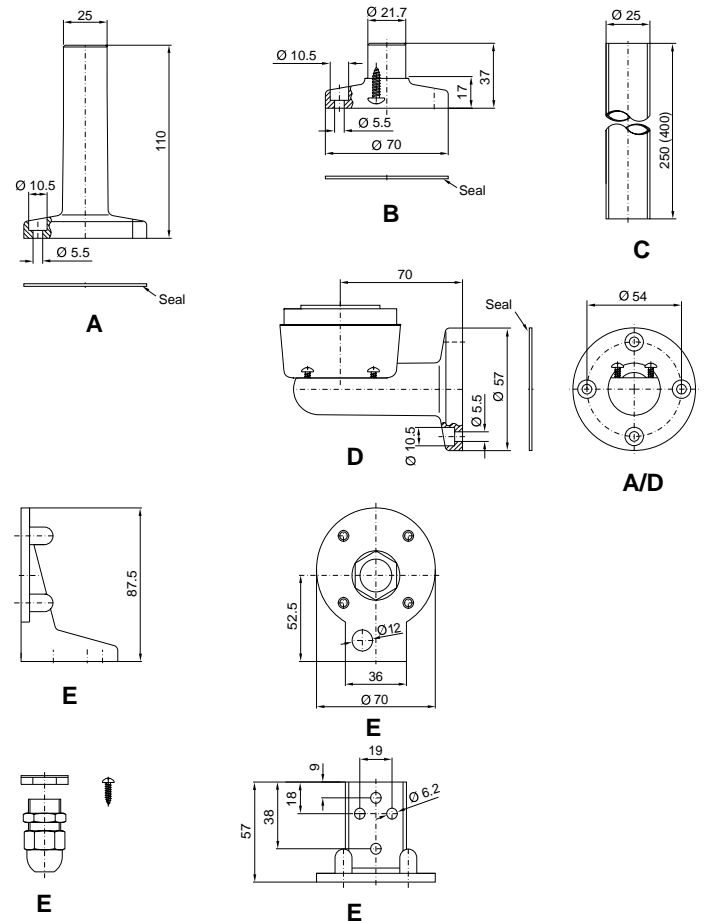
Mounting Component For Support Arm System		
Mounting component	Color	Part No.
For support arm system CP 6500	RAL 7030	<b>2375000</b>



### Mounting Components

Matching mounting components finish off the new range of signal pillars from Rittal. Here, you will find the correct connection accessories to suit every mounting variant.

Mounting Components		
Mounting components	Color	Part No.
Base with integral conduit, 25 mm diameter, 110 mm long	Black	<b>2374000</b>
Individual base, plastic	Black	<b>2374010</b>
Individual conduit, 250 mm long	Aluminum	<b>2374020</b>
Individual conduit, 400 mm long	Aluminum	<b>2374030</b>
Bracket for one-sided mounting	Black	<b>2374040</b>
Bracket for conduit mounting	Black	<b>2374050</b>



### Laminated Copper Bars Rittal Flexibar "S"

**Length:** 2000 mm/bar  
**Material:**  
 Cu Lamina —  
 • High-purity electrolyte copper F 20  
 Insulation —  
 • High-strength vinyl compound  
 • Expansion 370%  
 • Temperature range: -30°C to +105°C  
 • Flame retardant version to UL 94-V0  
 • Dielectric strength: 20 kV/mm.

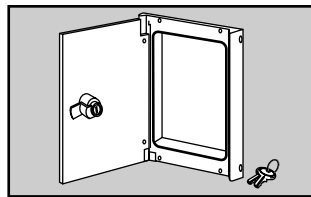
Ask about our Flexibar Build-to-Order program.

Laminated Copper Bars							
Construction <sup>1)</sup> (mm)	I <sub>n</sub> at 50 K <sup>2)</sup>	I <sub>n</sub> at 30 K <sup>2)</sup>	I <sub>n</sub> at 10 K <sup>2)</sup>	Curve (short-circuit resistance)	Installation type	Packs of	Part No.
6x9.0x0.8	250 A	220 A	120 A	-	-	1	<b>3565000</b>
6x13.0x0.5	200 A	150 A	110 A	-	-	1	<b>3566000</b>
4x15.5x0.8	300 A	210 A	140 A	-	-	1	<b>3567000</b>
6x15.5x0.8	350 A	290 A	170 A	a	1	1	<b>3568000</b>
10x15.5x0.8	450 A	350 A	190 A	a	1	1	<b>3569000</b>
5x20.0x1.0	400 A	300 A	180 A	a	1	1	<b>3570000</b>
5x24.0x1.0	450 A	370 A	230 A	a	1	1	<b>3571000</b>
10x24.0x1.0	800 A	600 A	340 A	b	1	1	<b>3572000</b>
5x32.0x1.0	550 A	470 A	280 A	b	2/3	1	<b>3573000</b>
10x32.0x1.0	1000 A	800 A	460 A	c	2/3	1	<b>3574000</b>
5x40.0x1.0	800 A	600 A	340 A	b	2/3	1	<b>3575000</b>
10x40.0x1.0	1200 A	950 A	500 A	c	2/3	1	<b>3576000</b>
10x63.0x1.0	1600 A	1240 A	715 A	d	2/3	1	<b>3579000</b>

<sup>1)</sup> Number of layers x width of layers x thickness of layers.

<sup>2)</sup> The sum of the ambient temperature and temperature increase gives the resultant conductor temperature of the laminated flat copper bar. *Example:* SV 3565.000 loaded with 220 A, i. e. the temperature increases by 30 K. At an ambient temperature of 35°C, this produces a resultant conductor temperature of 35°C + 30 K = 65°C.



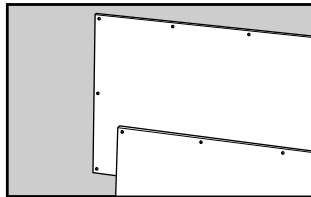


### Interface Box

The Rittal interface box provides secure accommodation for all standard computer ports, disk drives and sockets. The lockable metal cover provides a high mechanical load-bearing capacity, protects against unauthorized access and ensures an increased shielding effect for the installed equipment.

**Material:**

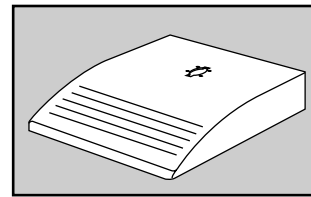
Frame: extruded aluminum section  
Mounting tray: sheet steel, 1.5 mm  
Cover: aluminum, 3.0 mm.



### Aluminum Front Panels

For individual assembly of an operating interface. A fixing kit CP 6058000 is required for installation. Other sizes and designs available on request.

**Material:** 3.0 mm aluminum, natural anodized.



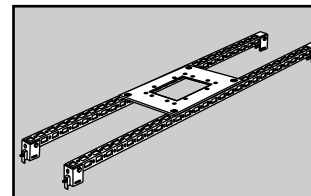
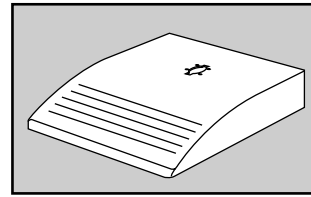
### Pedestal/Platform

Provides good line of site for remote applications.

**Material:** sheet steel

**Finish:** powder painted, textured, RAL 7030 stone grey or RAL 7035 light grey

**Configuration:** pedestal/floor plate with integrated reinforcement and installation cutout for CP 6000 or CP 6500 support arms; includes installation hardware for support arms.



### Wireway Reinforcement Bracket

The Rittal wireway reinforcement support bracket is used as an accessory for enclosures to facilitate easy installation of NEMA-style wireway directly to the sidewall or roof. The kit makes installing wireway a snap by positioning the enclosure's skin between the wireway and reinforcement bracket. Rittal's bracket installation kit includes system bars, brackets, nuts and bolts for a complete reinforcement option.

**Configuration:**

- Sidewall/roof mounting
- Complete with hardware
- 11 gauge steel
- RAL 7044 silk grey
- System bars for installation up to 1000 mm deep
- Dual brackets for variable mounting of system bars
- Slide nuts facilitate easy location of support bracket across entire length of system bars

Interface Box	
	Part No.
No socket	2482000

**Surface finish:**

Frame and mounting tray: powder coated in RAL 7035 light grey  
Cover: natural anodized

**Supply includes:** frame with hinged cover, cam with lock insert no. 3524 E, mounting tray including seal and installation hardware.

Aluminum Front Panels			
Width	Height	Packs of	Part No.
19"/482.6 mm	7 U/30.3 mm	1	6028000

Pedestal/Platform		
For support arm	Color RAL	Part No.
CP 6500	7035	6137535
CP 6000	7035	6137035

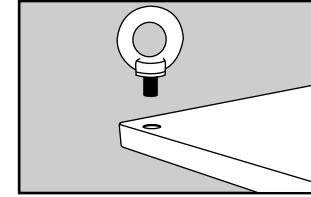
Wireway Reinforcement Bracket					
Part No.	Description	For wireway	Electromate or industrial wireway families		
			Lay-in Type 12	Feed-through Type 12	S/S feed-through Type 4X
9967667	2.5"x2.5" Wireway reinforce plate	2.5"x2.5"	X	X	-
9967668	4"x4" Wireway reinforce plate	4"x4"	X	X	X
9967669	6"x6" Wireway reinforce plate	6"x6"	X	X	X
9967670	8"x8" Wireway reinforce plate	8"x8"	X	X	-
9967671	6"x12" Wireway reinforce plate	6"x12"	X	-	-

Wireway Reinforcement Bracket					
Part No.	Size	A	B	C	D
9967667	2.5"x2.5"	150 mm (5.91")	150 mm (5.91")	63.50 mm (2.50")	63.50 mm (2.50")
9967668	4"x4"	200 mm (7.87")	200 mm (7.87")	101.60 mm (4.00")	101.60 mm (4.00")
9967669	6"x6"	250 mm (9.84")	250 mm (9.84")	152.40 mm (6.00")	152.40 mm (6.00")
9967670	8"x8"	325 mm (12.79")	325 mm (12.79")	203.20 mm (8.13")	203.20 mm (8.13")
9967671	6"x12"	400 mm (15.75")	250 mm (9.84")	304.80 mm (12.00")	152.40 mm (6.00")

- M6 bolts for fastening
- M6 screws for wireway plate to ensure flush fit

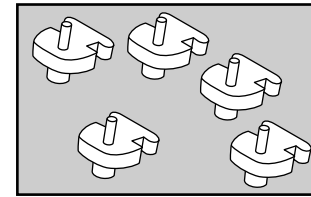
**Technical specifications:**

Material: steel  
Finish: RAL 7044 silk grey.



### Transportation Eyebolts For PS Enclosures

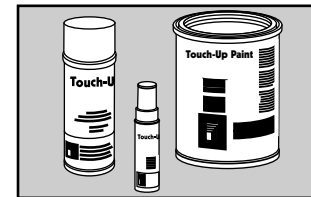
Provide best load distribution during transportation of heavy cabinets. Included with many enclosures - check configuration!



### Cable Tie Fastener

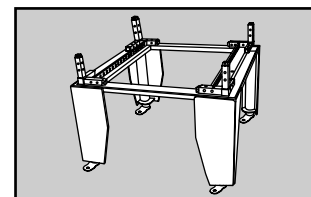
For all standard cable ties up to a width of 3/16"/4.8 mm. The fastener is inserted in a mounting channel and fixed in place by striking the split-rivet.

**Material:** polyamide 6.6



### Touch-Up Paint

For touch-up and repairs of powder coated and enameled surfaces.



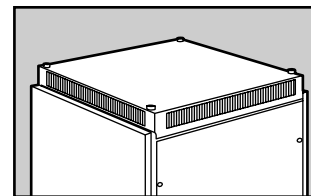
### Floor Stand Kit For PS/AE Enclosures

Bolts directly to all freestanding PS enclosures. AE (>1000 mm) requires adapter plate.

**Material:** 14 ga sheet steel, painted

**Color:** pebble grey (RAL 7032)

**Configuration:** 4 12" legs, adapter plate, installation hardware.



### Ventilated Roof

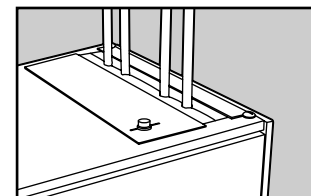
Replaces standard roof and has ventilation slots to promote heat removal. The ventilated roof can be used in conjunction with a roof blower.

**Not suitable when enclosure is lifted from top.**

**Material:** sheet steel

**Color:** pebble grey (RAL 7032)/black (RAL 9005)

**Configuration:** ventilated roof with spacers and installation hardware.

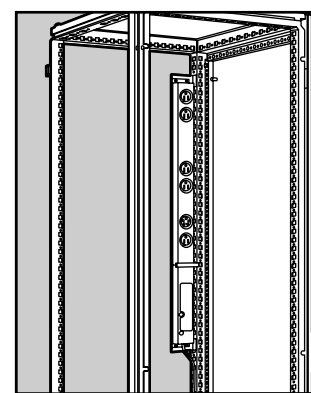


### Cable Entry Roof Panel

The cable entry roof panel replaces the standard roof panel. One stationary and one adjustable panel with foam gasket allow easy cable entry.

**Material:** sheet steel

**Color:** pebble grey (RAL 7032)/black (RAL 9005).



### Frame Mounted Power Strips

These strips have two clip-in brackets for mounting to any frame member of PS enclosures or system chassis that are installed in any Rittal enclosure.

- Illuminated ON/OFF power switch
- High quality industrial strength
- 6-foot power cord with plug.

Transportation Eyebolts		
	Packs of	Part No.
Transportation eyebolts	4	4568000

Cable Tie Fastener		
	Packs of	Part No.
	100	6059000

Touch-Up Paint		
Color	RAL code	Aerosol
Pebble grey (40 gloss)	RAL 7032	9001001
Pebble grey (60 gloss)	RAL 7032	9001002

Floor Stand Kit For PS/AE	
	Part No.
Floor stand kit	9966271

Ventilated Roof				
For enclosure W x D		Packs of	Part No. RAL 7032	Part No. RAL 9005
inches	mm			
24 x 24	600 x 600	1 set	7366200	9967840
24 x 32	600 x 800	1 set	7368200	9967841
32 x 32	800 x 800	1 set	7388200	9967842

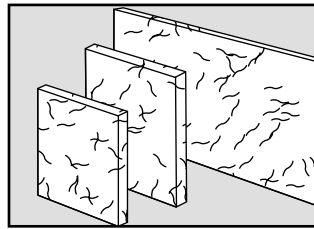
Cable Entry Roof Panel				
For enclosure W x D		Packs of	Part No. RAL 7032	Part No. RAL 9005
inches	mm			
24 x 24	600 x 600	1 set	7566200	9967838
24 x 32	600 x 800	1 set	7568200	9967740
32 x 32	800 x 800	1 set	7588200	9967703

Frame Mounted Power Strips								
Number of outlets	Amp			Surge protection	Approvals		Part No. RAL 7044	Part No. RAL 9005
	15	20	15/20		CSA	UL		
8 - 15A	X				X	X	7724000	9968339
8 - 15A			X			X	7724200	9968339
8 (4 duplex) - 20A		X				X	7724220	9968339
8 - 15A	X			X	X	X	7724300	9968339
15 - 15A	X				X	X	7748000	9968339
15 - 15A			X			X	7748200	9968339
15 - 15A	X			X	X	X	7748300	9968339
16 (8 duplex)		X				X	7748220	9968339
24 - 15A	X				X	X	7772000	9968339
24 - 15A			X			X	7772200	9968339
24 (12 duplex) - 20A		X				X	7772220	9968339
24 - 15A	X			X	X	X	7772300	9968339





# Climate Control Accessories

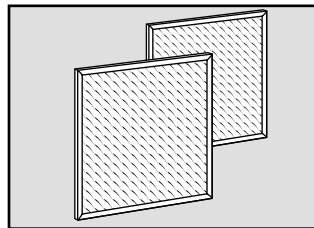


## Foam Filters For Air Conditioners

Rittal air conditioners require very little maintenance and are supplied without filters. Filters may be used for extreme conditions.

**Material:** Open cell polyurethane foam with excellent physical and mechanical properties. Temperature resistant from -40°F to +176°F/-40°C to +80°C.

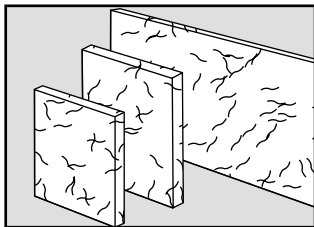
**Thickness:** 4"/10 mm.



## Metal Filters For Air Conditioners

When air conditioners are used in oily environments, washable metal filters are especially useful. Soiled metal filters can be easily washed with water or grease solvents.

**Material:** Aluminum.

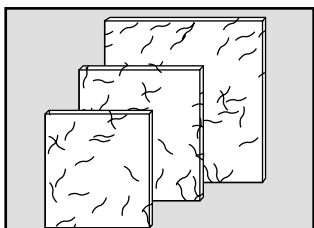


## Replacement Filters For Filter Fans

Made of random laid non-woven fabric with progressive build-up and provide reliable filtration of almost all types of dust down to a 10 um grain size.

Temperature resistant up to 212°F/100°C. Self extinguishing, class F1 per DIN 53 438.

Dusty air side: open structure  
Clean air side: closed structure.

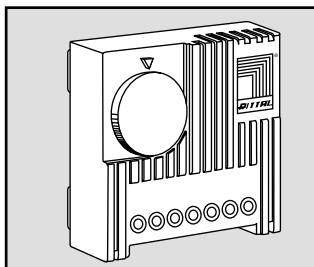


## Fine Filters

Use with extremely fine dust with particle sizes below 10 um. When fine filters are used, higher air resistance must be anticipated.

**Material:** Synthetic fiber

**Configuration:** Packs of 5.



## Hygrostat

It switches panel heaters or fans on when the relative humidity in an enclosure exceeds a preset value. This maintains the relative humidity in the enclosure below the dew point and prevents condensation in subracks or electronic component assemblies.

**Technical description:**

Contact: single pole spring loaded switch element.

Max. contact load:

AC ~ 5 (0.2)\* A

DC = max. 20 W

Settings range: 50-100% relative humidity

Air Conditioner Filters												
For AC Model	Part No. for Standard Filters	Packs of	Part No. for Metal Filters	Packs of								
SK 3272100 SK 3280100 SK 3290100 SK 3296100	3286100	3	3286200	1								
SK 3260146 SK 3262100 SK 3269100 SK 3279100 SK 3281100 SK 3293100 SK 3298100					3294100	3	3294200	1				
SK 3256100									3254000	3	3254200	1
SK 3265100 SK 3266100									3267100	3	-	-
SK 3203100 SK 3204100 SK 3205100 SK 3206100	9965899	3	-	-								

Replacement Filters For Filter Fans		
Filter fan	Exhaust filter	Part No.
SK 3323 Series	SK 3323200	3171100
SK 3325 Series	SK 3325200	3172100
SK 3326 Series	SK 3326200	3173100
SK 3321 Series	SK 3321200	3321700
SK 3322 Series	SK 3322200	3322700
SK 3327 Series	SK 3326200	3327700

**Material:** Synthetic fiber

**Configuration:** Packs of 5

Fine Filters For Filter Fans		
Filter fan	Exhaust filter	Part No.
3323 Series	SK 3323200	3181100
3325 Series	SK 3325200	3182100
3326 Series	SK 3326200	3183100

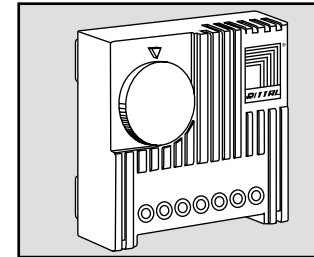
Hygrostat	
Rated operating voltage	Part No.
24 - 230 V AC/DC	3118000

Variance: approximately 4%  
Weight: approximately 4 oz/100 g  
Dimensions H x W x D:  
2.8 x 2.8 x 1.4"/71 x 71 x 3.5 mm  
\* ( ) = inductive load for cos = 0.6

**Technical description:**

- Wide voltage range—only one model is required to cover 24 V to 230 V

- Easy to connect – terminal block with screw connections on outside.
- Flexible mounting options – snaps directly (with included adaptor) into the PS enclosure profile or can be vertically or horizontally mounted on 35 mm DIN rails per EN 50 022.



## Enclosure Thermostat

Particularly suitable to control filter fans, panel heaters and heat exchangers, but can also be used to signal and monitor the temperature inside an enclosure.

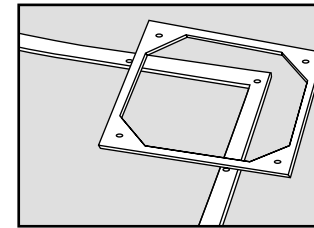
**Technical data:** Bi-metal sensor acts as temperature sensitive device with thermal feedback

**Contact:** Single-pole, spring-loaded switch element

**Permissible contact load:** Term. 5-3 (heating) AC 10 (4)\* A, DC 30 W

Term. 5-4 (cooling) AC 5 (4)\* A, DC 30 W

\* ( ) = inductive load for cos = 0.6

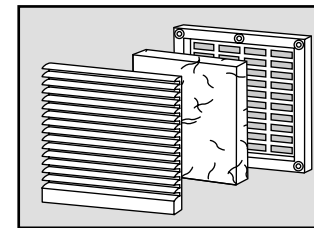


## Sealing Frame For Filter Fan

Helps achieve a protection rating of NEMA 12/IP 54 per DIN VDE 0470, part 1/11.92 when filter fans are installed with fine filters.

**Material:** Closed cell polyethylene

**Configuration:** Packs of 5, with installation screws.



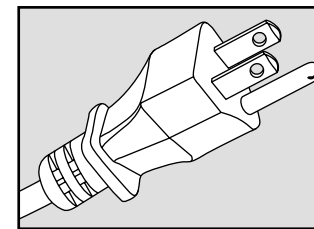
## Exhaust Filter

Can be installed in lower and upper areas of an enclosure to benefit from ventilation through natural convection.

**Material:** Noryl™ plastic, UL VO

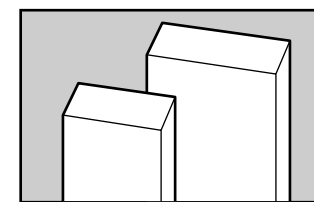
**Color:** RAL 7032 pebble grey

RAL 035 light grey (.XX7 Designation).



## Power Cord

16 ga power cord has NEMA 5-15-3-prong plug (9962136) and can be used for filter fans and other climate control devices that have terminal block connection.



## Shroud For Filter Fans

Installing a shroud over a filter fan and exhaust filter, in combination with a fine filter, increases the protection rating to NEMA 3R/IP 55 per EN 60 529/10.91. Especially suitable for use in the food industry and outdoor applications. UL 3R file F76083.

**Material:** Type 304 stainless steel.

**Temperature setting range:** +40°F to +131°F/+5°C to +55°C

**Weight:** approx. 4 oz./105 g

**Dimensions:** 3" x 3" x 1 1/4" / 71 x 71 x 33.5 mm

**Temperature variance inside enclosure:** Approx. 1°C +/- 0.8°C (with normal air)

**Technical description:**

- Wide voltage range—only one

model is required to cover 24 to 230 V AC/DC

- Easy to connect—terminal block with screw connections on outside

- Flexible mounting options—snaps directly (with included adaptor) into the PS enclosure profile or can be mounted on 35 mm DIN rails.
- UL/CUL recognized. CE marked.

Enclosure Thermostat	
Voltage	Part No.
230/115/60/48/24 V AC	3110000
60/48/24 V DC	

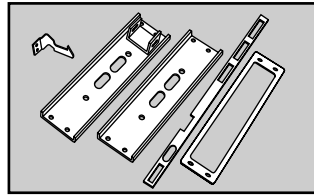
Sealing Frame For Filter Fan		
Filter fan	Exhaust filter	Part No.
3321 Series	SK 3321200	3321900
3322 Series	SK 3322200	3322900
3323 Series	SK 3323200	3191100
3325 Series	SK 3325200	3192100
3326 Series	SK 3326200	3193100

Exhaust Filter	
Part No.	Dimensions in mm
3321200/3321207	116.5 x 22.0
3322200/3322207	148.5 x 24.5
3323200/3323207	204.0 x 30.0
3325200/3325207	255.0 x 30.0
3326200/3326207	323.0 x 30.0

Power Cord		
Packs of	Voltage	Part No.
1	115/50/60	9962136
1	230/50/60	9965837

For filter fans	Dimensions						Part No.
	inches			mm			
SK 3321....	10.2	5.9	1.5	260	150	40	3321800
SK 3322....	10.6	6.9	2.1	270	176	55	3322800
SK 3323....	16.1	9.1	2.1	410	233	55	3323800
SK 3324....	19.7	11.1	3.3	500	282	85	3324800
SK 3325....							
SK 3326....	22	13.8	4.3	560	350	110	3326800
SK 3327....							

# Door System/Locking System Accessories



## Operator Adapters

Installation of certain disconnects in the universal cutouts of Rittal Electromate flange mounted disconnect enclosures may require an operator adapter to interlock the master door with the disconnect operating mechanism. These adapters are available for steel or stainless steel enclosures and for several brands and types of disconnects. The kits include an adapter plate and other required hardware, and come complete with installation and drilling instructions.

**Note:** Blank adapter plates can be used to cover the universal cutout when no disconnect is installed. The enclosure can then be used as a standard NEMA Type 12 enclosure.

### Material:

*Adapters for steel enclosures:*  
carbon steel

*Adapters for stainless steel enclosures:*  
chrome plated carbon steel.

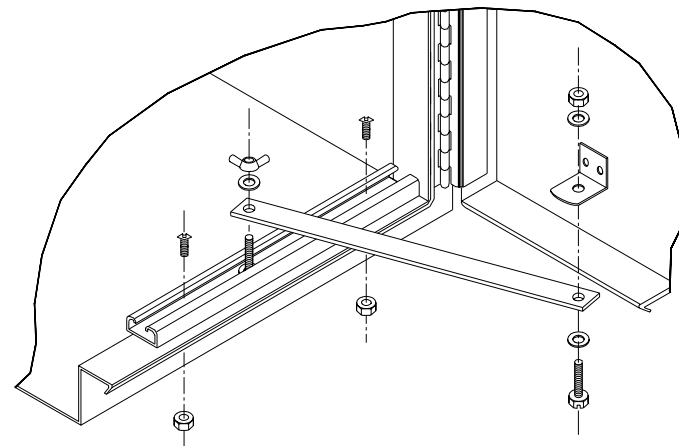
Operator Adapter		
Adapter Plate For Carbon Steel Enclosures Part No.	Adapter Plate For Stainless Steel Enclosures Part No.	Description
E AKAB	E AKABCHR	ALLEN-BRADLEY "1494F" AND "1494D"
E AKABV	E AKABVCHR	ALLEN-BRADLEY VARIABLE DEPTH "1494V"
E AKCHV	E AKCHVCHR	CUTLER HAMMER FOR C361/C371
E AKGETDA	E AKGETDACHR	G.E. STDA
E AKITE	E AKITECHR	ITE/G.E. STDA
E AKSD	E AKSDCHR	SQUARE D 9422
E AKWH	E AKWHCHR	WESTINGHOUSE
E AKWHAMT	E AKWHAMTCHR	WESTINGHOUSE AMT
E AKBAP	E AKBAPCHR	BLANK ADAPTER PLATE

### Finish/color:

*Adapters for steel enclosures:*  
polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

*Adapters for stainless steel enclosures:*  
chrome plated.

Door Stop Kit	
Part No.	Description
E DSTOPK	Door stop kit

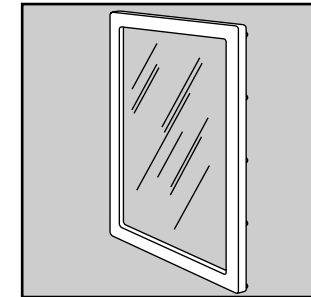


## Door Stop Kits

Door stops provide a quick and easy method of securing the door in an open position in most standard 24" and wider Rittal Electromate Type 4, 4X and 12 enclosures. Door stops can be bolted or welded at the top or bottom of the door opening. The opening angle of the door can be easily adjusted with a wing nut.

Door stop kits are available in zinc-plated steel and include the required hardware and installation instructions.

**Material:** zinc-plated steel.



## Window Kits For NEMA Type 4, 4X, 12 And 13 Enclosures

Windows can be installed in most Rittal Electromate enclosures of suitable size.

### Window Kits Are Available In Two Versions:

Steel window kits for indoor use on NEMA Type 4 and Type 12 enclosures.

Stainless steel window kits for indoor or outdoor use on NEMA Type 4, 4X, 12 and 13 enclosures in corrosive environments.

Window kits include all necessary hardware. Installation is easy — just make a cutout in the enclosure and attach the frame and window. Oil-resistant gaskets ensure a tight seal around entire window.

**Note:** Allow for clearance of gaskets, gasket retainers, door stiffeners, print pockets, door handles, latch rods, and other parts attached to door or cover when you determine the size of window kit you require.

### Steel Windows:

*Window frame:* heavy gauge steel with polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey

*Window pane:* .25" lexan with margard surface

### Stainless Steel Windows:

*Window frame:* heavy gauge Type 304 stainless steel with # 3 brushed finish

*Window pane:* .25" lexan with margard surface.

Window Kits				
Steel Part No.	Stainless Steel Part No.	Window clear viewing area	Frame size	Required cutout size
E PWK53NF	E PWK53NFSS	5.00 x 3.00	7.50 x 5.50	6.69 x 4.69
E PWK95NF	E PWK95NFSS	9.00 x 5.50	11.50 x 8.00	10.69 x 7.19
E PWK133NF	-	13.00 x 3.00	15.50 x 5.50	14.69 x 4.69
E PWK138NF	E PWK138NFSS	13.00 x 8.00	15.50 x 10.50	14.69 x 9.69
E PWK175NF	-	17.00 x 5.50	19.50 x 8.00	18.69 x 7.19
E PWK1711NF	E PWK1711NFSS	17.00 x 11.00	19.50 x 13.50	18.69 x 12.69
E PWK2315NF	E PWK2315NFSS	23.00 x 15.00	25.50 x 17.50	24.69 x 16.69
E PWK2919NF	E PWK2919NFSS	29.00 x 19.00	31.50 x 25.50	30.69 x 20.69
E PWK3523NF	-	35.00 x 23.00	37.50 x 25.50	36.69 x 24.69

## Oiltight Hole Seals

Oiltight hole seals are used to seal unused or empty pushbutton holes, conduit openings, and knockout openings from the entry of dirt, dust, oil and water.

### Steel Hole Seals:

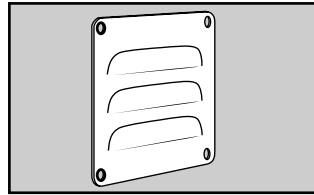
- 12 sizes – for holes up to 4.83"
- Covers holes with a .19" diameter
- Can be used on material thickness up to .31"
- Galvaneal with grey finish
- Back plate galvanized
- Mounting stud and wing nut zinc plated

- Oil-resistant gasket
- UL and CUL Component Recognized Type 4, 12 and 13

### Stainless Steel Hole Seals:

- 8 sizes – for holes up to 5.13"
- Covers holes with a .19" diameter
- Can be used on material thickness up to .31"
- Front surface polished
- Seal, back plate, stud and wing nut made of 300 series stainless steel
- Oil resistant gasket
- UL and CUL Component Recognized Type 4, 4X, 12 and 13.

Oiltight Hole Seals				
Steel Part No.	Stainless Steel Part No.	Designed for	Max. hole diameter	Hole seal diameter
E SPBG	E SPBGSS	Miniature oiltight pushbutton hole	0.75	1.22
E S050	E S050SS	.50 inch conduit hole	0.75	1.38
E S075	E S075SS	.75 inch conduit hole	1.13	1.56
E SPB	E SPBSS	Standard oiltight pushbutton hole	1.25	1.75
E S100	E S100SS	1.00 inch conduit hole	1.38	1.88
E S125	E S125SS	1.25 inch conduit hole	1.69	2.19
E S150	E S150SS	1.50 inch conduit hole	2.00	2.50
E S200	E S200SS	2.00 inch conduit hole	2.50	3.00
E S250	-	2.50 inch conduit hole	3.00	3.50
E S300	-	3.00 inch conduit hole	3.63	4.13
E S350	-	3.50 inch conduit hole	4.13	4.33
E S400	-	4.00 inch conduit hole	4.63	5.13



### Louver Panel Kits

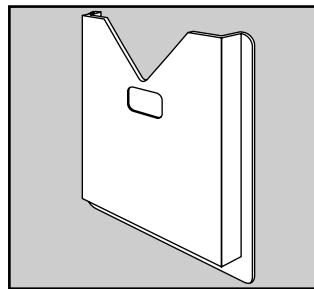
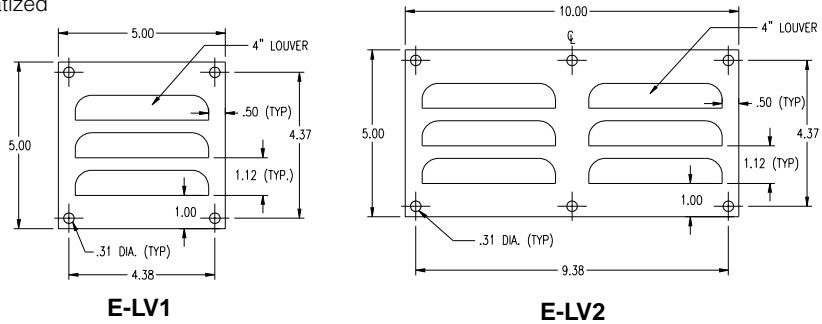
Louver panels help ventilation by using convection and promote air circulation in enclosures with low heat loss. Louver panel kits consist of a steel plate, prepunched with ventilation slots and mounting holes. An oil-resistant gasket is attached to the rear of the panel and mounting hardware is included.

**Material:** 14 gauge carbon steel

**Finish/color:** polyester-urethane powder coat over phosphatized surfaces, ANSI 61 grey.

Louver Panel Kits		
Part No.	No. of louvers	Recommended cutout size
E LV1	3	4 x 4
E LV2	6	4 x 9

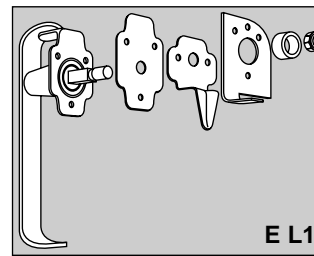
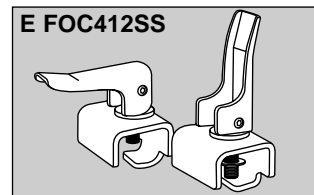
**Note:** Proper installation of a louver panel requires a cutout in the enclosure wall or door. See table for recommended sizes.



### Print Pockets

Print pockets can hold manuals, drawings, and other documentation. They are mounted on the inside of doors with adhesive tape.

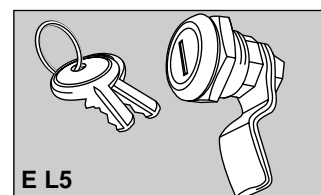
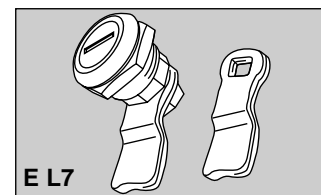
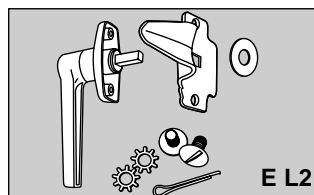
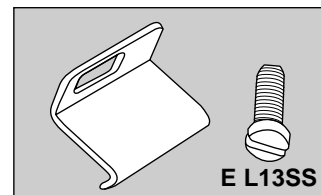
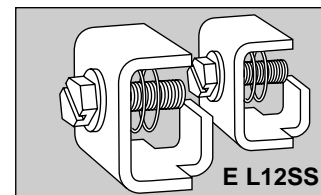
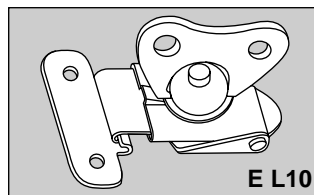
Print Pockets		
Part No.		Size
E POCKET1		Small
E POCKET2		Large



### Latch And Lock Kits

Latch And Lock Kits	
Part No.*	Description
E L1B	NEMA 12 Three point (short) - padlockable
E L1C	NEMA 12 Three point (medium) - padlockable
E L1D	NEMA 12 Three point (long) - padlockable
E L2A	NEMA 12 Single point - key locking
E FOC412SS	Fast opening stainless steel clamp for NEMA 4,12 enclosures (2 per pkg.)
E L5	Cylinder lock
E L7	Flush slotted latch
E L10	Butterfly draw latch
E L12SS	NEMA 4 hold down assembly
E L13SS	NEMA 4 JIC hold down assembly
E L23SS	Fast operating stainless steel clamp for JIC Type Enclosures (1 per pkg.)

**\*NOTE:** Single point designed for enclosures up to 24" in height  
 Three point (short) designed for enclosures 24" and 30" in height  
 Three point (medium) designed for enclosures 36" and 48" in height  
 Three point (long) designed for enclosures 60" and 72" in height



# Mounting Surface Accessories

### Mounting Panels For Junction Boxes

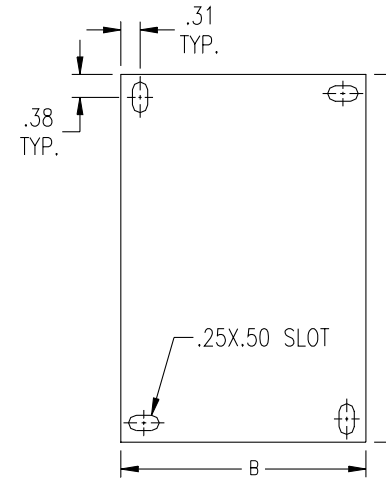
Mounting panels are available in two versions:

14 gauge steel mounting panels with a white finish.

14 gauge Type 304 stainless steel mounting panels with a commercial #2B finish protected on one side with a plastic film.

**Note:** All enclosures that accept these mounting panels come complete with mounting hardware.

Mounting Panels For Junction Boxes			
Steel Part No.	Stainless Steel Part No.	Size (inches)	
		A	B
E 6P4	-	4.88	2.88
E 6P6	-	4.88	4.88
E 8P6	E 8P6SS	6.88	4.88
E 8P8	-	6.88	6.88
E 10P8	E 10P8SS	8.88	6.88
E 10P10	-	8.88	8.88
E 12P6	-	10.88	4.88
E 12P10	E 12P10SS	10.88	8.88
E 12P12	E 12P12SS	10.88	10.88
E 14P8	-	12.88	6.88
E 14P12	E 14P12SS	12.88	10.88
E 16P10	-	14.88	8.88
E 16P14	E 16P14SS	14.88	12.88
E 18P16	-	16.75	14.75



JIC Mounting Panel

### Mounting Panels For Type 1 And 3R Enclosures

14 gauge steel mounting panels with a white finish.

**Note:** All enclosures that accept these mounting panels come complete with mounting hardware.

Mounting Panels For Type 1 And Type 3R Enclosures		
Part No.	Size (inches)	
	A	B
E 8N6P	6.25	4.25
E 10N8P	8.25	6.25
E 12N10P	10.25	8.25
E 12N12P	10.25	10.25
E 14N12P	12.25	10.25
E 16N12P	14.25	10.25
E 20N12P	18.25	10.25
E 24N12P	22.25	10.25
E 16N12P2	13.00	10.50
E 16N16P2	13.00	14.50
E 20N16P	17.00	14.50
E 20N20P	17.00	18.50
E 24N16P	21.00	14.50
E 24N20P	21.00	18.50
E 24N24P	21.00	22.50
E 30N20P	27.00	18.50
E 30N24P	27.00	22.50
E 30N30P	27.00	28.50
E 36N24P	33.00	22.50
E 36N30P	33.00	28.50

## Mounting Panels For NEMA Style Boxes

Mounting panels are available in two versions:

12 or 10 gauge steel mounting panels with a white finish.

12 gauge Type 304 stainless steel mounting panels with a commercial #2B finish.

These panels fit the following enclosures:

NEMA 1 – Extra Large

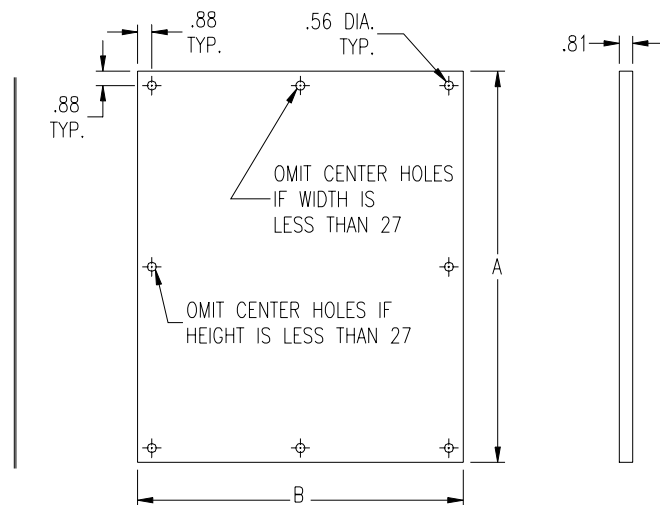
NEMA 3R – Hinge Cover

NEMA 4 & 4X – Single Door

NEMA 12 – Two Door Wallmount, Single Door, Right Flange Disconnect, Large JIC (CH)

Larger mounting panels have flanges on two or four sides; some also have lifting holes.

**Note:** All enclosures that accept these mounting panels come complete with mounting hardware.



Flat  
Mounting  
Panel

NEMA  
Mounting  
Panel

Flanged  
Mounting  
Panel

(Used If Both Dimensions  
Are Less Than 17)

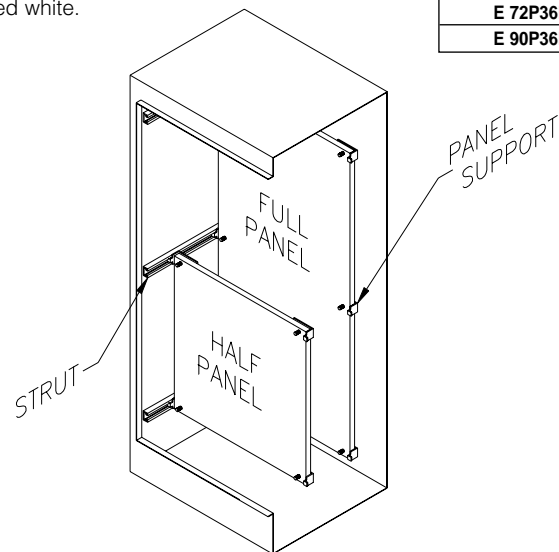
(Used If Either Dimension  
Is 17 Or Greater)

## Mounting Panels For One Door Freestanding

These mounting panels can be positioned at any depth along horizontal C-channels. Half-length mounting panels can be mounted in the upper or lower section of an enclosure. Mounting panel kits include zinc-plated mounting hardware.

Mounting panels fit the following enclosures: one door single access, Type 12 Freestanding Type 4 and 4X

**Material:** 10 gauge steel painted white.



NEMA Style Mounting Panels			
Steel Part No.	Stainless Steel Part No.	Size (inches)	
		A	B
E 16P12	E 16P12SS	13.00	9.00
E 20P12	-	17.00	9.00
E 16P16	E 16P16SS	13.00	13.00
E 20P16	-	17.00	13.00
E 24P16	-	21.00	13.00
E 30P16	-	27.00	13.00
E 20P20	-	17.00	17.00
E 24P20	-	21.00	17.00
E 30P20	-	27.00	17.00
E 12P24	-	9.00	21.00
E 24P24	-	21.00	21.00
E 30P24	-	27.00	21.00
E 36P24	-	33.00	21.00
E 42P24	-	39.00	21.00
E 48P24	-	45.00	21.00
E 30P30	-	27.00	27.00
E 36P30	-	33.00	27.00
E 42P30	-	39.00	27.00
E 48P30	-	45.00	27.00
E 36P36	-	33.00	33.00
E 42P36	-	39.00	33.00
E 48P36	-	45.00	33.00
E 60P36	-	57.00	33.00
E 72P36	-	69.00	33.00
E 60P48	-	56.00	44.00
E 60P60	-	56.00	56.00
E 72P60	-	68.00	56.00
E 72P72	-	68.00	68.00

Mounting Panels For One Door Freestanding			
Part No.	Description	Size (inches)	
		A	B
E 60P24F1	Full panel	48.00	20.00
E 72P24F1	Full panel	60.00	20.00
E 72P30F1	Full panel	60.00	26.00
E 72P36F1	Full panel	60.00	32.00
E 72P36F2	Half panel	30.88	32.00
E 90P36F1	Full panel	78.00	32.00

## Mounting Panels For Two Door Freestanding

These mounting panels can be positioned at any depth along horizontal C-channels. Half-length mounting panels can be mounted in the upper or lower section of an enclosure. Each full mounting panel for two-door enclosures comes with a center support that attaches at any depth to the top and bottom mounting C-channels. These center supports can be used in conjunction with heavy duty panel supports.

Mounting panel kits include zinc-plated mounting hardware. Some assembly required.

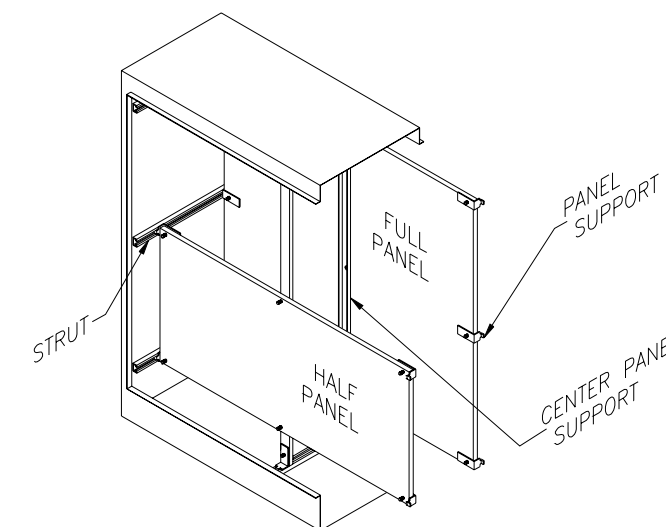
Mounting panels fit the following enclosures:

One door single access, Type 12

Freestanding Type 4 and 4X

**Material:** 10 gauge steel with a white finish.

Regular Mounting Panels For Two Door Freestanding			
Part No.	Description	Size (inches)	
		A	B
E 72P48F1	Full panel	60.00	44.00
E 72P60F1	Full panel	60.00	56.00
E 90P72F1	Full panel	78.00	68.00



## Side-Mount Mounting Panels For Freestanding Enclosures

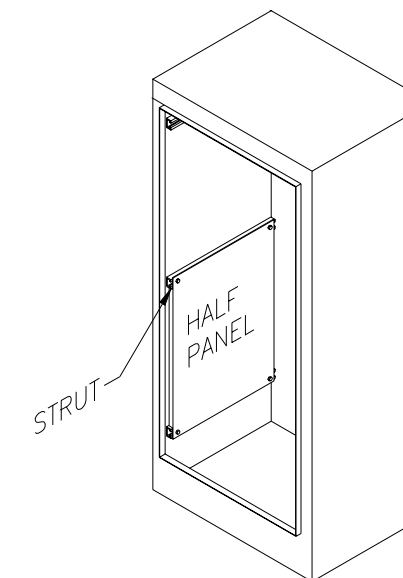
Side mount panels are attached to mounting channels and provide additional mounting surface on the sides of enclosures. Mounting panel kits include zinc-plated mounting hardware.

**Material:** 12 gauge steel with a white finish.

Side-Mount Mounting Panels For Freestanding		
Part No.	Size (inches)	
	A	B
E 60SMP14*	48.00	14.00
E 72SMP14*	60.00	14.00
E 72SMP20**	60.00	20.00

\* 14" wide side-mount panels will not fit in 16" deep two door enclosures if used in conjunction with back panels

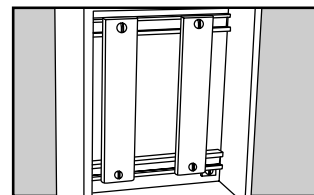
\*\* 20" wide side-mount panels will not fit in 24" deep two door enclosures if used in conjunction with back panels.





## Center Mounting Panel Supports

Center mounting panel supports can be mounted at any depth and make it possible to install single-wide mounting panels, swing out panels, and relay rack angles for two-door single-access enclosures.



## Terminal Block Kits For JIC Enclosures

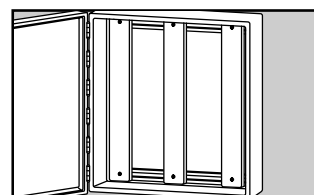
Terminal block kits allow for a quick method for mounting terminal blocks inside small Rittal Electromate enclosures. Each kit consists of two C-brackets that are mounted to weld nuts in the enclosure, and includes required mounting hardware.

Terminal mounting rails (must be ordered separately) are held in place with screws and spring locking nuts, and can be mounted anywhere on these brackets.

### Material/finish:

*Brackets and mounting rails:* steel with a white enamel finish over phosphatized surfaces

**Note:** Bracket assemblies and terminal mounting rails must be ordered separately. One bracket assembly plus the required number of terminal mounting rails must be ordered for each enclosure (terminal blocks are not included).



## Terminal Block Kits For Type 4, 4X, 12 And 13 Enclosures

These terminal block kits allow for a quick method to mount terminal blocks inside many Rittal Electromate enclosures including large Type 1 and large hinge cover Type 3R enclosures, as well as most of the two door wallmount Type 4, 4X, 12 and 13 enclosures.

Each kit consists of two or three C-brackets that can be mounted on mounting panels or enclosure walls and includes required mounting hardware.

Terminal mounting rails (must be ordered separately) are held in place with screws and spring locking nuts, and can be mounted anywhere on these brackets. Terminal mounting rail support kits consist of two Z-brackets that make it easy to mount terminal mounting rails.

### Material/finish:

*Brackets, mounting rails, support brackets:* Steel with a white enamel finish over phosphatized surfaces.

**Note:** Bracket assemblies, terminal mounting rails, and support kits must be ordered separately. One bracket assembly plus the required number of terminal mounting rails and supports must be ordered for each enclosure (terminal blocks are not included).

Center Mounting Panel Supports For Two Door Freestanding	
Part No.	Length (inches)
E 90FSCPS	87.25

Terminal Block Kit For JIC Enclosures		
Bracket Assembly Part No.	Enclosure dimension parallel to straps (inches)	Bracket length (inches)
E 6JTMA	6.00	5.00
E 8JTMA	8.00	7.00
E 10JTMA	10.00	9.00
E 10JTMAXD*	10.00	9.00
E 12JTMA	12.00	11.00
E 14JTMA	14.00	13.00

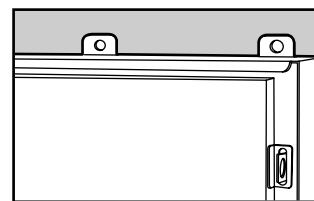
\* Provide extra 1.25" clearance from strap to rear wall of enclosure.

Terminal Mounting Rails			
Part No.	Enclosure dimension parallel to mounting rails (inches)	Rail length (inches)	Usable rail length (inches)
E 8JS	8.00	5.75	4.63
E 10JS	10.00	7.75	6.63
E 12JS	12.00	9.75	8.63
E 14JS	14.00	11.75	10.63
E 16JS	16.00	13.75	12.63

Terminal Block Kit For NEMA 4 & NEMA 12 — Bracket Assembly			
Part No.	No. of brackets	Enclosure dimension parallel to straps (inches)	Bracket length (inches)
E 12NTMA2	2	12.00	8.50
E 16NTMA2	2	16.00	12.50
E 20NTMA2	2	20.00	16.50
E 24NTMA2	2	24.00	20.50
E 24NTMA3	3	24.00	20.50
E 30NTMA2	2	30.00	26.50
E 30NTMA3	3	30.00	26.50
E 36NTMA2	2	36.00	32.50
E 36NTMA3	3	36.00	32.50

Terminal Mounting Rails			
Part No.	Enclosure dimension parallel to mounting rails (inches)	Rail length (inches)	Usable rail length (inches)
E 16NS	16.00	13.00	11.75
E 20NS	20.00	17.00	15.75
E 24NS	24.00	21.00	19.75
E 30NS	30.00	27.00	25.75
E 36NS	36.00	33.00	31.75
E 42NS	42.00	39.00	37.75
E 48NS	48.00	45.00	43.75
E 60NS	60.00	57.00	55.75

Terminal Mounting Rail Support Kit	
Part No.	Description
ETZ	Two "Z" brackets



## Drip Shield Kits For Type 12 Enclosures

Drip shields are available in standard versions for Type 12 enclosures. They are mounted above the door opening to protect against dripping water and settling dust when the door is opened. These kits are easily mounted on the enclosure with stainless steel screws and sealing washers, and sealed with sealing compound.

### Configuration:

Drip shield

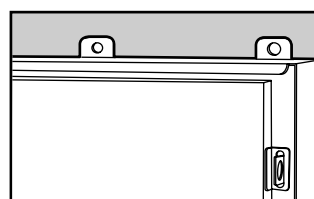
Stainless steel screws

Sealing washers

Sealing compound

### Material/finish:

14 gauge steel with polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey.



## Drip Shield Kits For Type 4, 4X And Type 12 Enclosures

Type 4 and 4X drip shields are available in standard and stainless steel versions. They are mounted above the door opening to protect against dripping water and dust when the door is opened. These kits are easily mounted on an enclosure with stainless steel screws and sealing washers, and sealed with sealing compound.

### Configuration:

Drip shield

Stainless steel screws

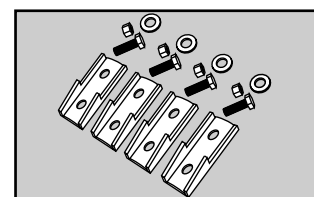
Sealing washers

Sealing compound

### Material/finish:

*Steel:* 14 gauge steel with polyester urethane powder coat over phosphatized surfaces, ANSI 61 grey  
*Stainless steel:* 14 gauge Type 304 stainless steel with a #3 brushed finish

**Ratings:** When properly installed on a Rittal Electromate enclosure, enclosure maintains UL and CUL Type 4, 4X and 12 protection.



## Wallmounting Bracket Kits

Wallmounting bracket kit C MTKIT is used for wallmounting Legacy Series enclosures. The E L14 wallmounting bracket kit is used for wallmounting NEMA style enclosures. Kits include sealing washers to help maintain NEMA 4 or 12 protection.

### Configuration:

*C MTKIT:* packs of 4

*E L14:* packs of 1

### Material:

*C-MTKIT and E-L14:* 10 gauge stainless steel.

## Type 12 Drip Shield Kits

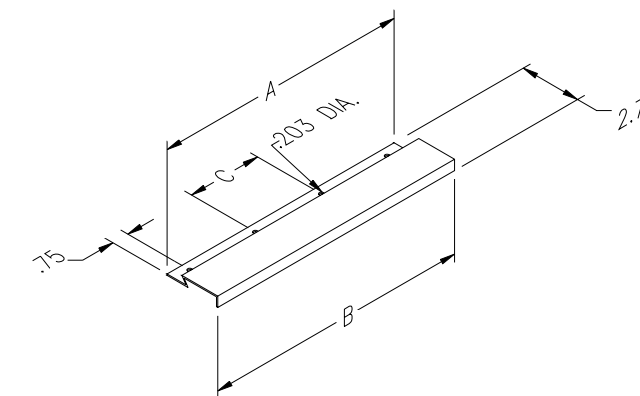
Part No.	For use with enclosure width (inches)
E DK12	12
E DK16	16
E DK20	20
E DK24	24
E DK30	30
E DK36	36
E DK42	42
E DK48	48
E DK60	60
E DK72	72

### Ratings:

When properly installed on a Rittal Electromate enclosure, enclosure maintains cUL and UL Type 12 protection.

## Type 4/4X/12 Drip Shield Kits

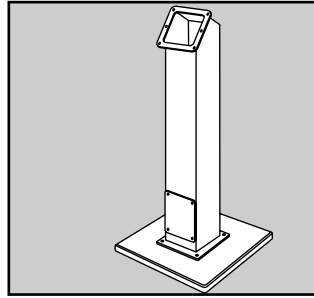
Steel Part No.	Stainless Steel Part No.	A (inches)	B (inches)	Mounting holes	C (inches)
E DK12NF	E DK12NFSS	11.50	12.00	3	5.00
E DK16NF	E DK16NFSS	15.50	16.00	3	7.00
E DK20NF	E DK20NFSS	19.50	20.00	4	6.00
E DK21NF	E DK21NFSS	20.50	21.00	4	6.33
E DK24NF	E DK24NFSS	23.50	24.00	4	7.33
E DK25NF	E DK25NFSS	24.50	25.00	4	7.67
E DK30NF	E DK30NFSS	29.50	30.00	5	7.00
E DK31NF	E DK31NFSS	30.50	31.00	5	7.25
E DK36NF	E DK36NFSS	35.50	36.00	5	8.50
E DK37NF	E DK37NFSS	36.50	37.00	5	8.75
E DK48NF	E DK48NFSS	47.50	48.00	7	7.67
E DK60NF	E DK60NFSS	59.50	60.00	8	8.29
E DK72NF	E DK72NFSS	71.50	72.00	9	8.75



## Wallmounting Bracket Kits

Part No.	Description
C MTKIT	Wallmounting bracket kit for Legacy Series enclosures
E L14	NEMA wallmounting bracket

# Pedestals And Bases



## Pedestal/Base

Pedestals provide extra flexibility and operator friendliness for control system applications. Both standard and stainless steel versions are available in two heights and either straight or angled. Wiring and cable routing can be either directly to the enclosure or through the base and column in which case a cutout is required in the enclosure bottom.

### Base configuration:

Leveling screws  
Holes

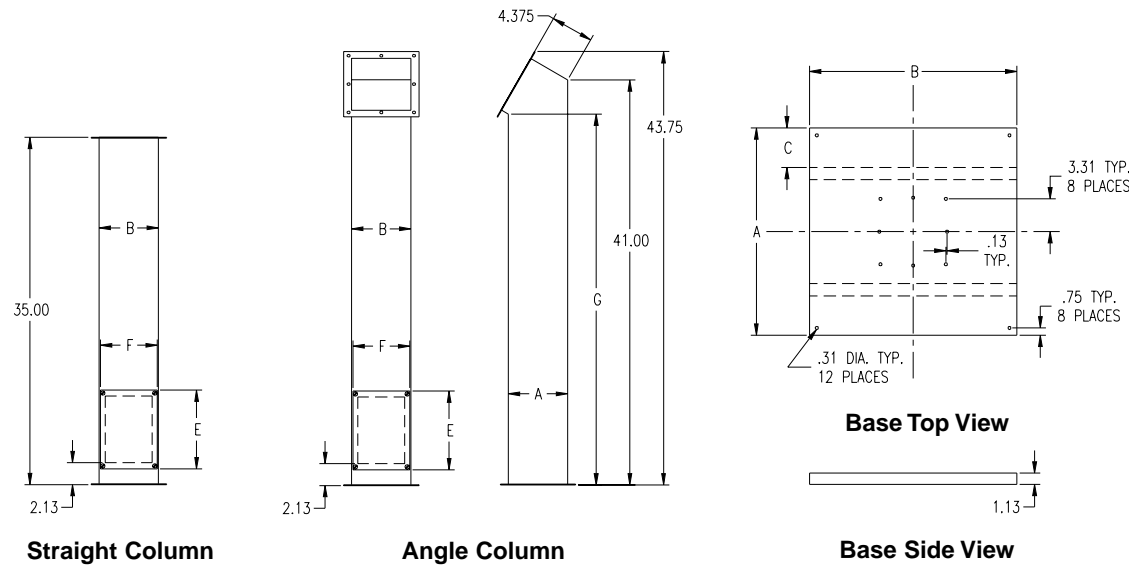
### Material/finish:

**Steel columns:** 14 gauge steel with polyester-urethane powder coat over phosphatized surfaces, inside and outside – ANSI 61 grey  
**Stainless steel columns:** Type 304 stainless steel with a #3 brushed finish  
**Flanges:** 10 gauge steel.

Pedestals							
Steel Part No.	Stainless Steel Part No.	Description	Column		Cover plate		Column height
			A	B	E	F	
E 44CCOL	E 44CCOLSS	Straight Column	4.00	4.00	7.00	3.75	35.00
E 66CCOL	E 66CCOLSS	Straight Column	6.00	6.00	7.75	5.75	35.00
-	E 44PBCCOLSS	Angled Column	4.00	4.00	7.00	3.75	38.69
-	E 66PBCCOLSS	Angled Column	6.00	6.00	7.75	5.75	37.53

Bases				
Steel Part No.	Stainless Steel Part No.	A	B	Stiffener location
				C
E 18SBASE	E 18SBASESS	18.00	18.00	3.00
E 24SBASE	E 24SBASESS	24.00	24.00	5.00

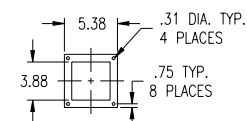
All dimensions are in inches.



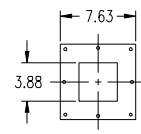
Straight Column

Angle Column

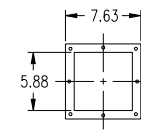
Base Side View



4x4 Top Flange

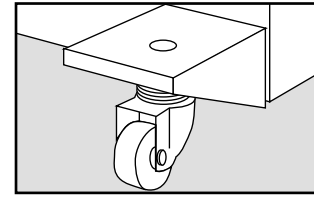


4x4 Bottom Flange  
(See Base For Hole Location)



6x6 Top And Bottom Flange  
(See Base For Hole Location)

# General Accessories



## Caster Kits

Casters make it easy to move cabinets around.

**Load capacity:** 350 lbs per caster

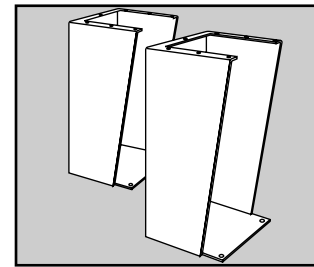
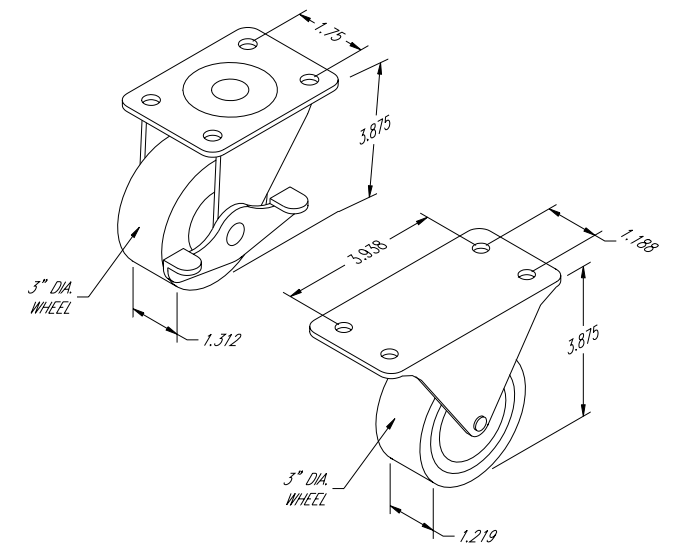
### Material:

Caster mounting plate: heavy gauge steel with zinc-plated finish

### Configuration:

2 fixed casters  
2 swivel casters  
Mounting hardware.

Caster Kits	
Part No.	Description
E C10C	Set of four casters
E C12C	Set of four casters



## Floor Stand Kits

Floor stand kits can be used to raise freestanding enclosures or to floor mount standard wallmount enclosures off the floor. They are easily installed — just drill holes in bottom of enclosure and bolt to enclosure.

**Note:** Wallmounting feet do not have to be removed from wallmount enclosures.

### Configuration:

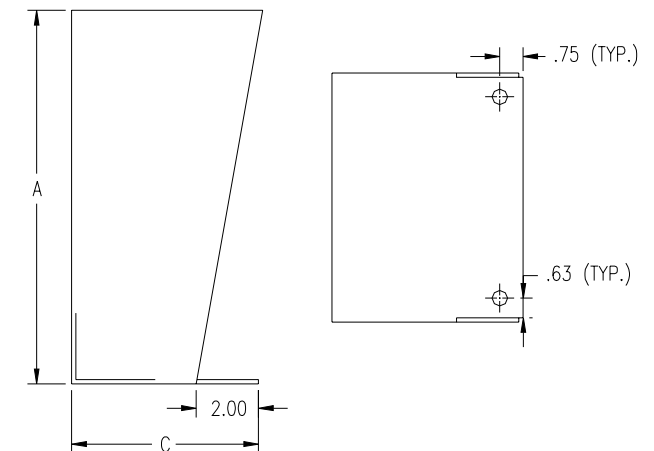
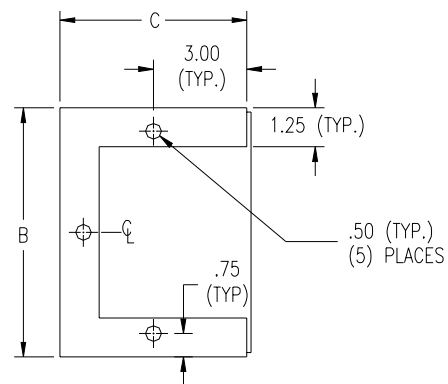
2 stands  
Mounting hardware

### Material/finish:

**Steel:** 10 gauge steel with grey primer over phosphatized surfaces

**Stainless steel:** 10 gauge Type 304 stainless steel with #3 brushed finish.

Floor Stand Kits				
Steel Part No.	Stainless Steel Part No.	Height	Width	Depth
		A	B	C
E FK0608	E FK0608SS	6.00	8.00	6.00
E FK0610	E FK0610SS	6.00	10.00	8.00
E FK0612	E FK0612SS	6.00	12.00	8.00
E FK0618	E FK0618SS	6.00	18.00	8.00
E FK1208	E FK1208SS	12.00	8.00	6.00
E FK1210	E FK1210SS	12.00	10.00	8.00
E FK1212	E FK1212SS	12.00	12.00	8.00
E FK1216	E FK1216SS	12.00	16.00	8.00
E FK1218	E FK1218SS	12.00	18.00	8.00
E FK1220	E FK1220SS	12.00	20.00	8.00
E FK1808	E FK1808SS	18.00	8.00	6.00
E FK1810	E FK1810SS	18.00	10.00	8.00
E FK1812	E FK1812SS	18.00	12.00	8.00
E FK2408	E FK2408SS	24.00	8.00	6.00
E FK2410	E FK2410SS	24.00	10.00	8.00
E FK2412	E FK2412SS	24.00	12.00	8.00
E FK2416	E FK2416SS	24.00	16.00	8.00

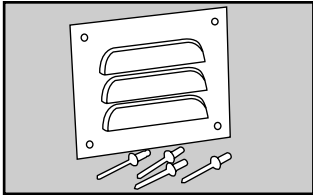


### Touch-Up Paint

Rittal Electromate paint can be used for touch-up and repairs of powder coated or enameled surfaces.

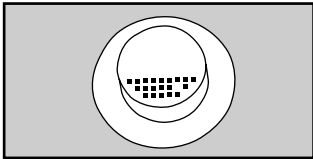
Touch-up Paint	
Part No.	Color
E L17	White enamel
E L21	ANSI 61 grey polyester powder

# Fiberglass Accessories



### Louver Panel Kits

Louver Panel Kits	
Part No.	Number of Louvers
L FLPK3KIT	1
L FLP1	1



### Drain/Vent Kits

Drain/Vent Kits	
Part No.	Packs of
L FDV3KIT	1
L FDV1	1

### Mounting Foot

Mounting Foot	
Part No.	Packs of
L FIMTGFTKIT	1

# Technical Information

## Certifications & Standards

The enclosure selection process includes the following five considerations:

- 1. Examination of the Application**  
Industrial applications usually require strong mechanical enclosures which are durable. Electronic and communication applications are more diverse, but space and security are usually the more dominant considerations.
- 2. Environment Protection**  
The environment where the equipment will be located (i.e., outdoors, factory floor, office, laboratory, chemical plant, etc.) establishes the degree of protection required. The NEMA enclosure ratings provide the information needed to select the enclosure for your application requirements.  
The application environment is a significant factor in specifying the enclosure material. For mild steel enclosures, painting is the most basic protection; stainless steel, aluminum, fiberglass, or polycarbonate should be considered for more corrosive applications. Electromagnetic interference (EMI) and radio frequency interference (RFI) are additional environmental factors which impact enclosure material selection.
- 3. Space Requirements**  
Space requirements include size and equipment arrangement as well as aesthetics. Accessories such as windows, back panels, swingout panels, swing frames, system bars, chassis, lights, wiring terminals, as well as EMI/RFI shielding and climate control solutions also influence size and appearance.
- 4. Climate Control Solutions**  
Especially in electronic enclosure applications, climate control is becoming an important issue because technology advances continue to reduce component size. Smaller components increase heat generation by placing more components in the same enclosure volume. Also in some applications, heaters are required to prevent condensation.

- 5. Security**  
The monetary value of equipment placed within enclosures has increased. The safety of personnel can be jeopardized by unauthorized access and operation of equipment. Enclosure security can be enhanced by the selection of hinges, latches, locks and fasteners.  
The five steps in this enclosure selection process are not new, but numerous enclosure and design options are available to meet a diversity of needs in each area. In addition almost any enclosure in this catalog can be modified to meet unique application requirements in a specific environment.

### Application

*The products in this catalog are designed for electrical and electronic enclosure applications in commercial or industrial locations.*

*The enclosure products in this publication should be applied, installed and used only by qualified engineers, technicians or electricians knowledgeable of the standards, laws, regulations and ordinances associated with the respective application.*

### Installation

Enclosures must be mounted to structures which will support the weight and sustain all other forces which the enclosure and its associated equipment may impose. Before any circuits are energized, all electrical and mechanical clearances must be checked to confirm that the equipment functions safely and properly. Assemblers and installers should consult with manufacturers and observe all regulatory procedures and practices to assure electrical and mechanical conformance in each application.

### Industry Standards

The following information is provided with permission of the respective organizations to assist in the selection of an enclosure:

### Enclosure Ratings

CSA, IEC, NEMA and UL use rating classifications which establish performance requirements for enclosures. CSA, NEMA and UL are the recognized organizations in North America. IEC standards fulfill a similar function in Europe and other parts of the world. Efforts to harmonize enclosure standards are underway, however several years are anticipated before the effort is complete.

In North America, both UL and CSA are accredited by the Standard Council of Canada (SCC) as Certification Organizations (CO) and Testing Organizations (TO). With its SCC accreditation, UL is able to evaluate products for use in Canada. Approved products carry the cUL mark. Both UL (cUL) and CSA perform follow-up services to assure that manufacturers continue to comply with material and process specifications.

In Europe, the CE Marking signifies that a product complies with all European Union (EU) directives and with applicable health, safety, environmental and consumer protection standards. The mark also promotes free trade into and within the EU. The CE marking is not applied to empty enclosures because they are considered only as inactive parts of the final equipment assembly. The equipment integrator is responsible for compliance with applicable EU directives and standards.

# Technical Information

## Certifications & Standards

The IEC rating system uses different evaluation criteria and has more classifications than the UL and CSA standards. Because the classification ratings differ, equating IEC classifications with NEMA Type enclosures can be controversial and depends on individual interpretation of ratings.

The National Electrical Manufacturers Association (NEMA) publishes ratings, but does not test or list enclosures. The NEMA enclosure designations are the standard reference for enclosures in this publication, and regardless of type, all enclosures provide protection to personnel against incidental contact with the enclosed equipment. To assist in the proper selection of an enclosure, the NEMA types are differentiated by the environmental conditions as listed below:

- NEMA 1** Indoor use to provide a degree of protection against falling dirt.
- NEMA 2** Indoor use to provide a degree of protection against falling dirt; dripping and light splashing of liquids.
- NEMA 3** Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow and windblown dust; and that will be undamaged by the external formation of ice on the enclosure.
- NEMA 3R** Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet and snow; and that will be undamaged by the external formation of ice on the enclosure.
- NEMA 3S** Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow and windblown dust; and in which the external mechanism(s) remain operable when ice laden.

- NEMA 4** Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose-directed water; and that will be undamaged by the external formation of ice on the enclosure.
- NEMA 4X** Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose-directed water and corrosion; and that will be un-damaged by the external formation of ice on the enclosure.
- NEMA 5** Indoor use to provide a degree of protection against falling dirt; settling airborne dust, lint, fibers and flyings; and dripping and light splashing of liquids.
- NEMA 6** Indoor or outdoor use to provide a degree of protection against falling dirt; hose-directed water and the entry of water during occasional temporary submersion at a limited depth; and will be undamaged by the external formation of ice on the enclosure.
- NEMA 6P** Indoor or outdoor use to provide a degree of protection against falling dirt; hose-directed water and the entry of water during prolonged submersion at a limited depth; and will be undamaged by the external formation of ice on the enclosure.
- NEMA 12** Indoor use to provide a degree of protection against falling dirt; circulating dust, lint, fibers and flyings; and dripping and light splashing of liquids.
- NEMA 13** Indoor use to provide a degree of protection against falling dirt; circulating dust, lint, fibers and flyings; and spraying, splashing and seepage of water, oil and non-corrosive coolants.




Comparison of Enclosure Types for Non-Hazardous Locations												
Provides a Degree of Protection Against the Following Environmental Conditions	TYPE OF ENCLOSURE											
	1	2	3	3R	4	4X	5	6	6P	12	13	
Incidental Contact with Enclosed Equipment	X	X	X	X	X	X	X	X	X	X	X	X
Indoor	X	X	X	X	X	X	X	X	X	X	X	X
Outdoor			X	X	X	X		X	X			
Falling Dirt	X	X	X	X	X	X	X	X	X	X	X	X
Dripping and Light Splashing Liquids		X	X	X	X	X	X	X	X	X	X	X
Rain, Sleet* and Snow			X	X	X	X		X	X			
Circulating Dust, Lint, Fibers and Flyings			X		X	X		X	X	X	X	X
Settling Dust, Lint, Fibers and Flyings			X		X	X	X	X	X	X	X	X
External Ice*			X	X	X	X		X	X			
Hosedown and Splashing Water					X	X		X	X			
Oil and Coolant Seepage										X	X	
Oil and Coolant Spraying and Splashing												X
Corrosive Agents						X			X			
Occasional Temporary Submersion								X	X			
Occasional Prolonged Submersion									X			

\*External operating mechanisms are not required to be operable when the enclosure is ice covered.



# Technical Information

## NEMA, UL And CSA Standards

Enclosure rating	NEMA National Electrical Manufacturers Association (NEMA 250) 	UL Underwriters Laboratories, Inc. (UL 50) 	CSA Canadian Standards Association (C22.2 No.94-M91) 
<b>Type 1</b>	Enclosures are intended for indoor use primarily to provide a degree of protection against the contact with the enclosed equipment.	Indoor use primarily to provide protection against contact with the enclosed equipment and against a limited amount of falling dirt.	General purpose enclosure. Protects against accidental contact with live parts.
<b>Type 2</b>	Enclosures are intended for indoor use primarily to provide a degree of protection against limited amounts of falling water and dirt.	Indoor use to provide a degree of protection against contact with the enclosed equipment and against a limited amount of falling dirt.	Indoor use to provide a degree of protection against dripping and light splashing of noncorrosive liquids, and falling dirt.
<b>Type 3</b>	Enclosures are intended for outdoor use primarily to provide a degree of protection against rain, sleet, windblown dust, and damage from external ice formation.	Outdoor use to provide a degree of protection against windblown dust and windblown rain; undamaged by the formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection against rain, snow, and windblown dust; undamaged by the external formation of ice on the enclosure.
<b>Type 3R</b>	Enclosures are intended for outdoor use primarily to provide a degree of protection against rain, sleet, and damage from external ice formation.	Outdoor use to provide a degree of protection against falling rain; undamaged by the formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection against rain, snow; undamaged by the external formation of ice on the enclosure.
<b>Type 4</b>	Enclosures are intended for indoor and outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, hose-directed water, and damage from external ice formation.	Indoor or outdoor use to provide a degree of protection against falling rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection against rain, snow, and windblown dust, splashing and hose-directed water; undamaged by the external formation of ice on the enclosure.
<b>Type 4X</b>	Enclosures are intended for indoor and outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, hose-directed water, and damage from external ice formation.	Indoor or outdoor use to provide a degree of protection against falling rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure; resists corrosion.	Indoor or outdoor use to provide a degree of protection against rain, snow, and windblown dust, splashing and hose-directed water; undamaged by the external formation of ice on the enclosure; resists corrosion.
<b>Type 6</b>	Enclosures are intended for indoor and outdoor use primarily to provide a degree of protection against hose-directed water, the entry of water during occasional temporary submersion at a limited depth, and damage from external ice formation.	Indoor or outdoor use to provide a degree of protection against entry of water during temporary submersion at a limited depth; undamaged by the formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection against entry of water during temporary submersion at a limited depth; undamaged by the formation of ice on the enclosure.
<b>Type 12</b>	Enclosures are intended for indoor use primarily to provide a degree of protection against circulating dust, falling dirt, and dripping non-corrosive liquids.	Indoor use to provide a degree of protection against dust, dirt, fiber flyings, dripping water, and external condensation of non-corrosive liquids.	Indoor use primarily to provide a degree of protection against circulating dust, lint, fibers, and flyings; dripping and light splashing of noncorrosive liquids; not provided with knockouts.
<b>Type 13</b>	Enclosures are intended for indoor use primarily to provide a degree of protection against dust, spraying water, oil and non-corrosive liquids.	Indoor use to provide a degree of protection against lint, dust seepage, external condensation and spraying of water, oil, non-corrosive liquids.	Indoor use primarily to provide a degree for protection against circulating dust, lint, fibers, and flyings; seepage and spraying of noncorrosive liquids including oils and coolants.

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# Technical Information

## EN60529/IP Environmental Ratings

Degrees Of Protection Against Solid Objects				Degrees Of Protection Against Water	
Description	Definition	First characteristic numeral	Second characteristic numeral	Description	Definition
Non-protected		0	0	No protection	
Protected against solid foreign objects of 50 mm diameter and greater	The object probe, sphere of 50 mm diameter shall not fully penetrate	1	1	Protected against vertically falling water drops	Vertically falling water drops shall have no harmful effects
Protected against solid foreign objects of 12.5 mm diameter and greater	The object probe sphere of 12.5 mm diameter shall not fully penetrate	2	2	Protected against vertically falling water drops when enclosure tilted up to 15 degrees	Vertically falling water drops shall have no harmful effects when the enclosure is tilted at any angle up to 15 degrees on either side of the vertical axis
Protected against solid foreign objects of 2.5 mm diameter and greater	The object probe of 2.5 mm diameter shall not penetrate at all	3	3	Protected against spraying water	Water sprayed at an angle up to 60 degrees on either side of the vertical shall have no harmful effects
Protected against solid foreign objects of 1.0 mm and greater	The object probe of 1.0 mm diameter shall not penetrate	4	4	Protected against splashing water	Water splashed against the enclosure from any direction shall have no harmful effects
Dust protected	Ingress of dust is not totally prevented, but dust shall not penetrate in a quantity to interfere with satisfactory operation of the apparatus or to impair safety	5	5	Protected against water jets	Water protected in jets against the enclosure from any direction shall have no harmful effects
Dust tight	No ingress of dust	6	6	Protected against powerful water jets	Water protected in powerful water jets against the enclosure from any direction shall have no harmful effects
			7	Protected against the effects of temporary immersion in water	Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is continuously immersed in water under standardized conditions of pressure and time
			8	Protected against the effects of continuous immersion in water	Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is continuously immersed in water under conditions which shall be agreed between manufacturer and user but which are more severe than for numeral 7

The degree of protection provided by an enclosure is indicated by the IP code in the following way:

**1st characteristic numeral**—  
e.g. protection against solid foreign objects of 12.5 mm diameter and greater

**IP 2 3**

**2nd characteristic numeral**—  
e.g. protected against spraying water

# Technical Information

## Certifications & Standards

### Reference Documents and Sources

NEMA Standards Publication 250, Enclosures for Electrical Equipment (1000 Volts Maximum) and NEMA Standards Publication ICS6, Enclosures for Industrial Controls and Systems

#### National Electrical Manufacturers Association

1300 North 17th Street, Suite 1847  
Rossllyn, VA 22209

CSA Standard C22.2 No. 14 Industrial Control Equipment for Use in Ordinary (Non-Hazardous) Locations; CSA Standard C22.2 No. 40 Cut-Out, Junction and Pull Boxes; and CSA Standard 22.2 No. 94 Special Purpose Enclosures

#### Canadian Standard Association

178 Rexdale Boulevard  
Etobicoke, Ontario, Canada M9W 1R3

UL 50 Enclosures for Electrical Equipment; UL 94 Tests for Flammability of Plastic Materials for Parts in Devices and Appliances; UL 508 Industrial Control Equipment; UL 870 Wireways, Auxiliary Gutters and Associated Fittings; and UL 746C Polymeric Materials - Use in Electrical Equipment Evaluations

#### Underwriters Laboratories

333 Pflingsten Road  
Northbrook, IL 60062-2096

#### Underwriters Laboratories of Canada

7 Crouse Road  
Scarborough, Ontario M1R 3A9 Canada

IEC 529 Classification of Degrees of Protection by Enclosures; IEC 204 Electrical Equipment of Industrial Machines

#### International Electrotechnical Commission

1 Rue de Varembei  
CH-1211  
Geneva 20, Switzerland

ANSI Z55.1 Grey Finishes for Industrial Apparatus and Equipment

#### American National Standards Institute

1430 Broadway  
New York, NY 10018

### Information for Comparison of IEC and CSA/NEMA/UL/cUL Ratings

NEMA 250 and UL 50 specify tests for environmental conditions such as falling dirt, ice, corrosion, oil and coolants whereas IEC 529 (EN60529) does not have such requirements. Different rating requirements make comparison difficult and disagreements are common.

The IEC designation consists of the letters IP followed by two numerals. The first number indicates the degree of protection provided by the enclosure with respect to persons and solid foreign objects entering the enclosure. The second number indicates the degree of protection provided by the enclosure with respect to the harmful ingress of water.

The data contained in the following tables are provided for information; however, *caution is necessary when attempting to equate IEC and NEMA enclosure ratings because an exact equivalence is not possible*. The table can only be used to convert NEMA designations to IEC, it should not be used inversely. The cross reference is based on engineering judgement and is not approved by any standards organization.

NEMA Enclosure Type	IEC Enclosure Type
1	IP 10
2	IP 11
3	IP 54
3R	IP 14
3S	IP 54
4	IP 66
4X	IP 66
6	IP 67
12	IP 52
13	IP 54

\*Comparison ratings in this table are taken from Appendix A, NEMA 250-1997. Test data may change the equivalent rating published by the enclosure manufacturer.

# Technical Information

## Enclosures & The CE Mark

### Background

The CE mark has been a feature of European Community legislation since 1987, but it was actually born out of the New Approach Resolution two years earlier. This resolution aimed to "harmonize" the various national systems of European standards, and prompted various New Approach Directives (NADs). The CE mark applies only to those NADs which include testing or certification requirements.



The precise testing and certification required for CE labeling is spelled out in each individual NAD. These requirements may vary from NAD to NAD. The reason is that, depending on industry or application, a particular NAD may address certain technologies or safety concerns that require special attention.

CE marking on a product or system presumes conformity by the manufacturer or importer that the product complies with one or more directives that relate to the product. As a result, the product may be placed on the European Community market without challenge by national administrations.

The CE mark does not reflect any level of quality or any particular forms of testing or certification. It should not be confused with third-party certification marks like UL, TÜV or VDE. Appearance of the CE mark on a product simply enables that product to be placed on the market within the EC. And it gives confidence to the member national administrations that essential requirements of relevant directives have been met.

### Empty Enclosures Are Unaffected

There is no New Approach Directive relating to empty enclosures. Therefore, Rittal Corporation cannot CE label empty enclosures. However, when electrical products and other electronic packages are added, or when the enclosure is used as part of a complete set-up (defined as a "machine" in the New Approach Directives), CE labeling of the complete system may be required.

The following three directives are most likely to apply to electrical related products:

- 89/392/EEC Machinery Directive; applies to both machinery and safety components
- 73/23/EEC Low Voltage Directive; applies to products with 50 to 1000 V AC input
- 89/336/EEC EMC Directive; sets the requirements for the control of emissions and immunity.

Each contains its own specific requirements generally concerning design, manufacture, intended use, test reports, and technical documentation from a Notified Body, as well as supporting schematics and diagrams.

### Rittal CE Marked Products

Electrical related products, which cannot function independently, do not need to be labeled, but require a declaration. Upon request, Rittal will supply customers with a declaration of conformity documenting the valid scope of EMC low voltage or machine guideline for the product in question. CE affected Rittal products—including filter fans, enclosure lights, and door switches—already meet CE requirements and already carry the mark. Rittal air conditioners and air/air heat exchangers have passed all tests for conformity to the relevant guidelines and have been certified by international test laboratories including TÜV and VDE. And Rittal heaters are now moving through the final stages of CE compliance.

### Additional Products

Rittal is CE marking the following products affected by the EMC directive:

- Roofmount air conditioners
- Wallmount air conditioners
- Mini-cooling air conditioners
- Air/air heat exchangers
- 1S fan and filter units
- Rackmount 19" fans
- Enclosure lights
- Door switches
- Power distribution products

### For Additional Information...

Rittal's product management team is becoming increasingly informed about the CE mark and can help with a variety of questions regarding CE marking requirements. Call (800) 637-4425 for additional information about CE marked Rittal products.

Or ask your Rittal Representative for a complimentary copy of *Understanding and Using Europe's CE Mark*—Rittal's comprehensive white paper on the subject.

### EN 50298 Standard

The object of this standard is to specify definitions, classifications, characteristics and test requirements of enclosures to be used as part of switchgear and controlgear assemblies, that do not exceed 1000 V a.c. at frequencies not exceeding 1000Hz, or 1500 V d.c. and suitable for general use for either indoor or outdoor applications. This standard applies to empty enclosures, prior to the incorporation of switchgear and controlgear components by the user, as supplied by the enclosure manufacturer. Compliance with the safety requirements of the applicable product standard is the responsibility of the final assembly manufacturer.

Enclosures meeting this standard were type tested according to clauses written in the standard. These type tests include: static load, lifting, impact code, environmental code, thermal stability, heat, abnormal heat and fire, dielectric strength, continuity of protective circuit, weathering, corrosion and marking.

# Technical Information

## Enclosure Materials

### Specifications for Construction Materials Used in Rittal Enclosures

Rittal offers **Aluminum, Galvanized Steel, Painted Steel, Polycarbonate, Stainless Steel** and **Fiberglass** Enclosures. The choice of material is dependent on the concentration of various corrosives present in the application environment and other physical properties necessary to meet the design specifications. Although NEMA 4X is the only enclosure fabricated and rated for resistance to corrosive agents, other enclosure materials and ratings offer a degree of corrosion resistance in less harsh environments.

To begin the selection process, one must consider all the corrosive agents which can be present in an application, but determining the concentration and corroding agents may be a complex process. Usually several corrosive elements are present and interactions are not always well documented.

Water is the most common corrosive and is usually present to some extent in every enclosure application. Adjacent processing operations or other intermittent activities such as industrial cleaning or road salt may expose the enclosure to a variety of corrosive agents and temperatures. Each environment is unique and all possible corrosive agents should be identified for the intended enclosure application.

Once the corrosive agents and concentrations are identified, information in this section can be used to select the enclosure material. Metal corrosion is influenced by surface finish, surface treatment such as painting or galvanizing, and use of materials such as stainless steel, fiberglass, polycarbonate or aluminum which are naturally corrosion resistant.

To select the best enclosure material for an application; chemical resistance, physical strength and economic data are presented in several tables beginning on the next page. In Table 1 enclosure materials are rated on a continuum from "Recommended" to "Limited or Unacceptable" in three broad categories of chemicals. Since the chemical resistance categories in the table are extremely broad, some materials may perform well in specific corrosive environments within a general category and it is best to consult the detailed Chemical Resistance Information provided in Table 3.

Besides the enclosure material, the corrosion resistance of features such as windows, gaskets, latches, etc. must also be considered. Table 4 provides the chemical resistance information which can be used to select the commonly used materials for these features.

Much of the chemical resistance information in Tables 3 and 4 is based on total immersion testing in the chemical for a minimum of 30 days at 72°F. The information in these tables is intended as a guide only. Total immersion testing is considered quite severe and **the results may not necessarily reflect the performance under actual field conditions.** The user assumes responsibility for selection of the material based on the characteristics of the application environment.

#### Cold Rolled Steel

A low carbon, cold finished steel, produced by passing bar stock through a set of rolls. Cold rolled sheets have less thickness variation and a better finish than hot rolled steel.

#### Galvanized Steel

A zinc coated steel which is hot dip galvanized, metal sprayed or electroplated to provide corrosion resistance. Galvanizing provides a sacrificial coating and cathodic protection.

#### Hot Rolled Steel

A low carbon, hot finished steel, produced by passing bar stock through a set of rolls at a temperature above the re-crystallization temperature. Hot rolled steel sheet has a poorer finish than cold rolled steel.

#### Pickled and Oiled Steel Sheets

Hot rolled steel sheets which have had the scale removed by means of a hot, weak sulfuric acid bath after which an oil film has been applied for corrosion resistance.

#### Polycarbonate

Thermoplastic polymer which becomes solid when temperature falls below its melting point. Can be recycled and reused. Has excellent electrical properties and high impact strength.

#### Stainless Steel

A highly corrosion resistant iron alloy containing between 12% and 25% chromium. For superior corrosion resistance, Rittal fabricates enclosures from both Type 304 and 316 Stainless Steel which are non-magnetic. Type 316, a low carbon stainless steel, is harder and more corrosion resistant; it is an excellent material for marine application.

#### Aluminum

A lightweight metal which quickly forms a natural oxide layer to resist corrosion. Rittal fabricates enclosures from Type 5052 aluminum, the highest strength non-heat treatable aluminum alloy recommended for marine applications.

#### Galvaneal

A hot-dip zinc coated sheet which has been heated after coating to allow interdiffusion of zinc and iron to form an alloy coating.

#### Fiberglass

Enclosures are molded under heat and pressure with fiberglass reinforced polyester resin to produce superior chemical resistance in corrosive applications. The glass fiber reinforcement increases enclosure strength to withstand physical loads such as unexpected impacts or additional tensile loads.

# Technical Information

## Enclosure Materials

Table 1. Broad Categories Of Enclosure Material Chemical Resistance			
CONTINUUM OF USE	GENERAL CATEGORY OF CHEMICALS		
	Acids	Alkalines	Solvents
Recommended ↓ Acceptable ↓ Limited or Unacceptable ↓ ↓	Stainless Steel	Stainless Steel Fiberglass	Stainless Steel Fiberglass Aluminum Powder Coated Steel
	Fiberglass		
	Powder Coated Steel	Galvanized Steel Powder Coated Steel	Galvanized Steel
	Aluminum Galvanized Steel	Aluminum	

Detailed material strength information is beyond the scope of this catalog and should be obtained from a materials reference or Rittal; however, Table 2 provides some relative data to help with this selection.

Table 2. Relative Material Strength And Cost Comparison Of Commonly Used Enclosure Materials				
MATERIAL	RELATIVE PHYSICAL STRENGTH	RELATIVE COST	APPLICATION CONDITIONS	TEMPERATURE LIMITATIONS
Aluminum	Average	Average	Indoor and outdoor, marine, solvents, petrochemical sulfates, nitrates and specific acids.	None for enclosure applications
Mild Steel: Galvanized Painted	High	Average Low	Indoor and outdoor where the respective coating provides acceptable protection in a mildly corrosive environment.	None for enclosure applications
Stainless Steel	High	Average-High	Indoor and outdoor in highly corrosive applications. Food and dairy processing or marine.	None for enclosure applications
Acrylic	Average	Low	Enclosure windows. Weatherable, scratch resistant. Good resistance to solvents.	-31°F(-35°C) to 180°F(82°C)
Poly-carbonate	Average	Low-Average	Enclosure windows. Not recommended for direct sunlight, exposure to organic solvents and concentrated alkalis.	-31°F(-35°C) to 248°F(120°C)
Nylon	Average	Low	Cord grip, hinges, latches.	-22°F(-30°C) to 212°F(100°C)
Fiberglass	Average	Low-Average	Indoor and outdoor for continuously damp and highly corrosive environments. Petrochem, water treatment, food processing, coating, salts and chemicals.	-40°F(C) to 250°F(121°C)
<b>Gaskets:</b>				
Neoprene	Low	Low	Oil resistance. Seams may be a problem.	-40°F(C) to 225°F(107°C)
Silicone	Low	Average	Oil resistance temperature and chemical resistance.	-40°F(-40°C) to 350°F(175°C)
Urethane	Low	Average	Water and oil resistance, chemical resistance.	-40°F(C) to 200°F(93°C)



# Technical Information

## Chemical Resistance

**Table 3. Specific Chemical Resistance Information Metals, Coated Metals And Fiberglass Materials**

CHEMICAL	Aluminum	Fiber Glass Polyester	Steel			Stainless Steel	
			Polyester Powder	Urethane Enamel	Galvanized	Type 304	Type 316
Acetyldehyde	S	U	—	—	—	S	S
Acetic Acid (10%)	L	S	U	U	U	S	U
Acetone	S	L	L	U	L	S	S
Aluminum Chloride (10%)	U	S	U	U	U	U	M
Aluminum Sulfate (10%)	L	S	U	U	U	U	S
Ammonia Gas	L	S	—	—	—	S	S
Ammonium Chloride	U	S	U	U	U	S	S
Ammonium Hydroxide (10%)	S	L	U	U	U	S	S
Ammonium Nitrate (10%)	M	S	U	U	U	S	S
Ammonium Phosphate (10%)	L	M	S	L	U	S	M
Ammonium Sulfate	S	S	—	—	—	S	S
Aniline	L	U	—	—	—	S	S
ASTM #1 Oil	S	S	S	S	S	S	S
ASTM #3 Oil	S	S	S	S	S	S	S
Axle Grease	S	S	S	S	S	S	S
Benzene	S	S	—	—	S	S	S
Boric Acid (10%)	M	S	U	U	U	S	S
Bromine	U	L	U	U	U	U	U
Butyl Acetate	M	L	—	—	—	S	S
Butyric Acid	U	S	—	—	—	S	S
Calcium Chloride (10%)	L	S	U	U	U	L	S
Calcium Hydroxide (10%)	U	S	U	U	U	S	S
Calcium Hypochlorite (10%)	L	M	U	U	U	U	M
Calcium Sulfate	M	S	U	U	U	S	S
Carbolic Acid (25%)	M	L	U	U	U	S	S
Carbon Disulfide	S	L	—	—	—	S	S
Carbon Tetrachloride	S	M	U	S	S	U	S
Chlorine (dry)	S	S	—	—	—	S	S
Chlorine (water) 5-10 ppm	M	L	S	U	U	U	—
Chlorobenzene	S	S	—	—	S	S	S
Chloroform	L	U	—	—	—	S	S
Chrome Plating Solution	U	L	U	U	U	L	L
Chromic Acid	S	S	—	—	—	U	U
Citric Acid (10%)	U	M	U	U	U	S	S
Copper Sulfate	U	S	—	—	—	S	S
Creosote	L	L	—	—	—	S	S
Cutting Fluid (5 Star) 10%	S	S	U	U	U	S	S
Cutting Fluid (Castrol 980 H)	S	S	S	U	U	S	S
Cutting Fluid (Norton 205)	U	S	U	U	U	S	S
Cutting Fluid (Rustlick) 10%	M	S	U	U	U	S	S
Cutting Oil (Dark)	S	S	S	S	S	S	S
Diethyl Ether	S	S	—	—	—	S	S
Ethyl Alcohol	S	S	M	U	S	S	S
Ethylene Dichloride	S	L	—	—	—	—	—
Ethylene Glycol	S	S	S	S	U	S	S
Ferric Chloride	U	S	U	U	U	S	U
Ferric Nitrate	—	S	—	—	—	S	S
Ferric Sulfate	M	S	—	—	—	S	S

**KEY :**  
**S =** superior resistance / completely unaffected under all conditions  
**L =** limited resistance / some chemical attack may be expected over time, exposure should be limited to fumes or occasional light splashing  
**M =** moderate resistance / superficial (aesthetic) effects only, example: some loss of surface gloss or color change may occur, but mechanical properties (strength) remain unaffected  
**U =** unsatisfactory severe / chemical attack in a relatively short time  
**— =** no data available

# Technical Information

## Chemical Resistance

**Table 3. Continued**

CHEMICAL	Aluminum	Fiber Glass Polyester	Steel			Stainless Steel	
			Polyester Powder	Urethane Enamel	Galvanized	Type 304	Type 316
Fluorine	S	U	—	—	—	M	—
Formaldehyde	S	S	—	—	—	L	S
Formic Acid	U	S	U	U	U	M	S
Fuel Oil (#2)	S	S	M	S	S	S	M
Gasoline	S	M	—	—	—	S	S
Glycerine	S	S	—	—	S	S	S
Hydraulic Brake Fluid	S	S	U	U	S	S	S
Hydraulic Oil	S	S	S	S	S	S	S
Hydrochloric Acid (10%)	U	M	U	U	U	U	U
Hydrocyanic Acid	S	U	—	—	—	S	S
Hydrofluoric Acid (20%)	U	U	U	U	U	U	U
Hydrogen Peroxide	S	M	—	—	—	L	S
Hydrogen Sulfide	M	S	—	—	—	L	S
Hypochlorous Acid	U	S	—	—	—	—	—
Isopropyl Alcohol	S	S	M	U	S	S	S
Kerosene	S	S	S	S	S	S	S
Lacquer Thinner	S	S	L	U	S	S	S
Lactic Acid	M	S	—	—	—	L	S
Lime	M	M	—	—	—	—	—
Liquid Dish Soap (10%)	M	S	U	U	U	S	M
Lubricating Oils	S	S	—	—	—	S	S
Magnesium Chloride (10%)	L	S	U	U	U	S	S
Magnesium Hydroxide (10%)	L	S	U	U	U	S	S
Mercuric Chloride (10%)	U	M	U	U	U	S	U
Methyl Ethyl Ketone	S	L	—	—	—	S	S
Methylene Chloride	S	S	U	U	M	S	S
Milk	S	S	—	—	—	S	S
Mineral Oil	S	S	—	—	—	S	S
Mineral Spirits	S	S	S	S	S	S	S
Motor Oil (10 weight)	S	S	S	S	S	S	S
Nickel Salts	L	S	—	—	—	L	S
Nitric Acid (10%)	U	M	U	U	U	S	S
Nitrobenzene	S	L	—	—	—	S	S
Oleic Acid	S	S	—	—	—	L	S
Perchloroethylene	S	S	S	U	S	S	S
Phosphoric Acid (25%)	U	L	U	U	U	S	S
Phosphoric Acid (50%)	U	U	U	U	U	S	S
Pickling Solution	U	M	U	U	U	S	M
Potassium Carbonate (10%)	U	S	S	S	L	S	S
Potassium Chloride (25%)	L	S	U	U	U	S	S
Potassium Hydroxide (25%)	U	U	U	U	U	M	M
Potassium Nitrate (10%)	U	S	U	U	U	S	S
Potassium Sulfate (10%)	L	S	U	U	U	S	S
Soap (Igepal) 10%	L	S	S	U	U	S	S
Sodium Bicarbonate (10%)	L	S	S	S	U	S	S
Sodium Bisulfate (10%)	U	L	U	U	U	S	S
Sodium Chloride (25%)	L	S	U	U	U	S	S
Sodium Hydroxide	U	U	U	U	U	M	M

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**U =** unsatisfactory severe / chemical attack in a relatively short time  
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# Technical Information

## Chemical Resistance

Table 3. Continued

CHEMICAL	Aluminum	Fiber Glass Polyester	Steel			Stainless Steel	
			Polyester Powder	Urethane Enamel	Galvanized	Type 304	Type 316
Sodium Hypochlorite	U	M	U	U	U	S	M
Sodium Nitrate (10%)	M	S	U	U	U	S	S
Sodium Phosphate (10%)	L	S	U	U	U	S	S
Sulfuric Acid (25%)	U	S	U	U	U	S	S
Sulfuric Acid (10%)	U	U	U	U	U	S	S
Tannic Acid ((10%)	L	S	U	U	U	M	M
Tetrahydrofuran	M	L	U	U	U	S	S
Toluene	S	S	L	U	S	S	S
Trichloroethylene	S	U	—	—	—	L	S
Trisodium Phosphate	L	M	—	—	—	—	—
Turpentine	S	M	M	U	L	S	S
Vegetable Oils	S	S	—	—	—	S	S
Vinegar	M	S	—	—	—	S	S
Water, Industrial	L	S	L	L	L	S	S
Water, Rain	L	S	S	L	L	S	S
Water, Sea	L	S	U	U	U	S	S
Water, Tap	L	S	S	L	L	S	S
Xylene	S	S	L	U	S	S	S
Zinc Acetate	S	S	—	—	—	S	S
Zinc Chloride	L	S	S	U	U	M	S
Zinc Sulfate	S	S	—	—	—	M	S

Table 4. Specific Chemical Resistance Information

CHEMICAL	Rigid PVC	Glass Nylon	Gaskets			Windows	
			Neoprene Rubber	Silicone Rubber	Urethane	Acrylic	Poly-carbonate
Acetaldehyde	U	—	S	S	—	—	—
Acetic Acid (10%)	L	U	U	M	L	S	S
Acetone	U	S	U	S	U	U	U
Aluminum Chloride (10%)	S	U	S	S	S	S	S
Aluminum Sulfate (10%)	S	L	U	S	S	S	S
Ammonia Gas	—	S	S	S	—	S	—
Ammonium Chloride	S	U	S	S	S	S	S
Ammonium Hydroxide (10%)	S	—	L	L	S	S	U
Ammonium Nitrate (10%)	S	U	U	S	S	S	U
Ammonium Phosphate (10%)	—	L	U	S	S	S	S
Ammonium Sulfate	S	U	S	S	—	—	—
Aniline	S	L	U	U	—	S	—
ASTM #1 Oil	—	—	M	S	S	S	M
ASTM #3 Oil	—	—	U	L	S	S	M
Axle Grease	—	—	L	S	S	S	M
Benzene	U	S	U	U	—	U	—
Boric Acid (10%)	L	S	S	S	S	S	S
Bromine	U	U	U	U	U	L	U
Butyl Acetate	U	S	U	U	—	U	—
Butyric Acid	U	U	U	—	—	—	—
Calcium Chloride (10%)	S	U	S	S	S	S	S
Calcium Hydroxide (10%)	S	—	U	S	L	S	S

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**L =** limited resistance / some chemical attack may be expected over time, exposure should be limited to fumes or occasional light splashing  
**— =** no data available  
**M =** moderate resistance / superficial (aesthetic) effects only, example: some loss of surface gloss or color change may occur, but mechanical properties (strength) remain unaffected  
**U =** unsatisfactory severe / chemical attack in a relatively short time

# Technical Information

## Chemical Resistance

Table 4. Continued

CHEMICAL	Rigid PVC	Glass Nylon	Gaskets			Windows	
			Neoprene Rubber	Silicone Rubber	Urethane	Acrylic	Poly-carbonate
Calcium Hypochlorite (10%)	S	U	U	S	U	M	S
Calcium Sulfate	S	U	S	S	S	S	S
Carbolic Acid (25%)	—	—	U	U	U	U	U
Carbon Disulfide	U	—	U	—	—	S	—
Carbon Tetrachloride	L	S	U	U	U	S	U
Chlorine (dry)	L	—	—	—	—	—	—
Chlorine (water) 5-10 ppm	L	—	L	S	S	S	S
Chlorobenzene	U	S	U	U	—	L	—
Chloroform	U	U	U	U	—	U	—
Chrome Plating Solution	—	—	U	U	U	S	S
Chromic Acid	L	U	U	M	—	U	—
Citric Acid (10%)	S	L	U	S	U	S	S
Copper Sulfate	S	L	S	S	—	U	—
Creosote	—	U	U	U	—	—	—
Cutting Fluid (5 Star) 10%	—	—	U	S	S	S	M
Cutting Fluid (Castrol 980 H)	—	—	L	S	S	S	L
Cutting Fluid (Norton 205)	—	—	S	S	S	S	S
Cutting Fluid (Rustlick) 10%	—	—	S	S	S	S	S
Cutting Oil (Dark)	—	—	U	S	S	S	S
Diethyl Ether	U	—	—	U	—	U	—
Ethyl Alcohol	S	—	L	S	S	U	M
Ethylene Dichloride	U	—	U	U	—	U	—
Ethylene Glycol	S	—	S	S	S	S	S
Ferric Chloride	S	U	L	S	L	S	S
Ferric Nitrate	S	U	S	M	—	—	—
Ferric Sulfate	S	U	S	M	—	—	—
Fluorine	L	—	—	U	—	—	—
Formaldehyde	L	U	U	M	—	S	—
Formic Acid	L	S	U	L	L	U	S
Fuel Oil (#2)	S	—	U	U	U	S	S
Gasoline	S	S	U	L	—	S	—
Glycerine	S	S	S	S	—	S	—
Hydraulic Brake Fluid	—	—	U	S	U	U	U
Hydraulic Oil	—	—	U	S	S	S	M
Hydrochloric Acid (10%)	S	U	L	L	U	S	S
Hydrocyanic Acid	S	—	S	M	M	—	—
Hydrofluoric Acid (20%)	L	U	U	U	—	S	M
Hydrogen Peroxide	S	U	U	M	—	S	—
Hydrogen Sulfide	S	—	U	M	—	—	—
Hypochlorous Acid	—	—	—	—	—	—	—
Isopropyl Alcohol	—	—	S	S	S	S	S
Kerosene	S	—	U	U	S	S	M
Lacquer Thinner	—	S	U	S	L	U	U
Lactic Acid	S	L	L	—	—	L	—
Lime	—	—	S	M	—	—	—
Liquid Dish Soap (10%)	S	—	L	S	S	S	S
Lubricating Oils	—	—	U	U	—	S	—
Magnesium Chloride (10%)	S	S	S	S	S	S	S

**KEY :**  
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# Technical Information

## Chemical Resistance

**Table 4. Continued**

CHEMICAL	Rigid PVC	Glass Nylon	Gaskets			Windows	
			Neoprene Rubber	Silicone Rubber	Urethane	Acrylic	Poly-carbonate
Magnesium Hydroxide (10%)	S	—	S	S	S	S	S
Mercuric Chloride (10%)	L	—	U	L	U	S	S
Methyl Ethyl Ketone	U	S	S	U	—	L	—
Methylene Chloride	—	U	U	S	U	U	U
Milk	S	—	S	S	—	S	—
Mineral Oil	S	—	L	M	—	S	—
Mineral Spirits	—	—	U	U	S	S	M
Motor Oil (10 weight)	—	—	U	U	S	S	S
Nickel Salts	S	—	U	S	—	—	—
Nitric Acid (10%)	S	U	U	U	U	S	L
Nitrobenzene	U	S	U	—	—	—	—
Oleic Acid	S	U	—	U	—	—	—
Perchloroethylene	—	—	U	S	U	U	U
Phosphoric Acid (25%)	S	U	S	S	U	S	S
Phosphoric Acid (50%)	S	U	S	S	U	S	S
Pickling Solution	—	—	L	M	M	S	S
Potassium Carbonate (10%)	L	S	S	S	S	S	S
Potassium Chloride (25%)	S	L	S	S	S	S	S
Potassium Hydroxide (25%)	S	S	U	L	M	U	U
Potassium Nitrate (10%)	S	L	S	S	S	S	S
Potassium Sulfate (10%)	SL	S	S	S	S	S	S
Soap (Igepal) 10%	S	—	U	S	S	S	S
Sodium Bicarbonate (10%)	S	S	S	S	S	S	S
Sodium Bisulfate (10%)	S	L	S	S	L	S	S
Sodium Chloride (25%)	S	S	S	S	S	S	S
Sodium Hydroxide	S	S	U	U	M	S	U
Sodium Hypochlorite	S	U	U	S	U	S	S
Sodium Nitrate (10%)	S	S	S	S	S	S	S
Sodium Phosphate (10%)	S	—	U	S	S	S	S
Sulfuric Acid (25%)	S	U	S	S	U	S	S
Sulfuric Acid (10%)	S	—	U	U	L	S	S
Tannic Acid (10%)	S	U	U	L	U	S	S
Tetrahydrofuran	—	S	U	U	U	U	U
Toluene	U	S	U	U	U	U	U
Trichloroethylene	U	U	U	U	—	U	—
Trisodium Phosphate	S	—	—	—	—	—	—
Turpentine	—	S	U	L	U	S	S
Vegetable Oils	S	—	L	S	—	S	—
Vinegar	—	S	L	S	—	S	—
Water, Industrial	S	—	S	S	S	S	S
Water, Rain	S	—	S	S	S	S	S
Water, Sea	S	—	S	S	S	S	S
Water, Tap	S	—	S	S	S	S	S
Xylene	—	S	U	M	U	S	U
Zinc Acetate	—	—	—	U	—	—	—
Zinc Chloride	S	U	M	S	U	S	M
Zinc Sulfate	S	L	S	S	—	—	—

**KEY :**  
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# Technical Information

## Enclosure Paint Finishes

The primary function of the enclosure's paint is to provide corrosion protection, but benefits such as improved appearance and added distinction should also be considered. The corrosive severity of the application conditions is the first consideration in selecting the finish. Once a paint has been chosen for its corrosion protection, other factors such as color, gloss, texture, ease of cleaning, retention of properties and maintenance can be evaluated to complete the selection.

Table 5 rates different paint types on a continuum of use from "Recommended" to "Unacceptable" in three broad categories of chemical corrosives. The table also provides moisture, heat and chip resistance information. Table 6 provides a relative cost comparison of the available paint categories and the enclosure materials to which they may be applied.

**Table 5. Broad Categories Of Paint Type Characteristics**

CONTINUUM OF USE	CHEMICAL RESISTANCE				CHIP RESISTANCE	HEAT RESISTANCE
	Acid	Alkalines	Solvents	Water		
Recommended			Polyester Powder, Urethane		Epoxy, Polyester Powder, Urethane	Epoxy
	Urethane, Polyester Powder	Urethane, Polyester Powder, Epoxy		Urethane, Polyester Powder		
			Epoxy			
Acceptable	Alkyds, Epoxy		Epoxy	Alkyds, Epoxy	Alkyds	Alkyds, Polyester Powder, Urethane
			Epoxy			
Limited or Unacceptable		Alkyds	Alkyds			

**Table 6. Relative Cost Comparison Of Paint Types**

PAINT TYPES	COST	MATERIAL APPLICATION
Alkyd	Medium	Mild Steel
Epoxy	Medium-High	Mild Steel
Polyester Powder	Low-Medium	Mild Steel, Aluminum
Urethane	Medium-High	Mild Steel, Aluminum

# Technical Information

## Enclosure Paint Finishes

**Other considerations in selecting a paint type include:**

- Lighter colors will dissipate heat and lower the temperature of internal equipment; darker colors will retain heat and increase the temperature of the cabinet interior. In outdoor applications lighter colors reflect sunlight and operate at lower temperatures.
- For severely corrosive applications, an inhibiting primer with an overcoat of epoxy or urethane is recommended.
- Textured finishes are generally less expensive, easier to touch-up, do not show fingerprints as readily and provide an attractive appearance; a textured paint finish is more difficult to clean.

- Some epoxy paints chalk and lose gloss.
- Safety concerns or corporate specifications may be considered in selecting a color; however, some special colors may add cost and increase lead times.

**Topcoating Powdercoated Enclosures**

Rittal uses the latest electrostatic powder coating technology to deposit a premium powder paint on enclosures; however, some applications may require a topcoating to meet unique specifications such as a color change or material requirement.

A topcoat can be applied to the existing powdercoat using the instructions below:

Topcoat Material	Application Instructions
Air Dry Acrylic Lacquer Hi-Solid Catalyzed Acrylic Hi-Solid Two Part Urethane Automotive Air Dry Acrylic Vinyl Air Dry Hi-Solid Polyester Bake Enamel	Wipe the enclosure surfaces to be topcoated with a clean solvent cloth. Allow the solvent to flash dry for approximately 5 minutes and apply the finish as directed by the paint supplier.
Air Dry Alkyd Hi-Solid Polyamide Epoxy	Lightly sand all surfaces to be topcoated with 320 grit or finer sandpaper. Wipe all surfaces with a clean isopropyl alcohol impregnated cloth. Allow the solvent to flash dry for 5 minutes and apply the finish as directed by the paint supplier.

If the topcoat material does not appear in the table, consult Rittal.

**Surface preparation for painting galvanized surfaces  
Solvent or detergent wiping**

Cleaning galvanized surfaces with solvents or alkaline detergents is an accepted surface preparation procedure for galvanized coating applications. Oil and grease can be removed with rags or brushes saturated in solvents, such as high-flash naphtha. Trisodium phosphate or similar alkaline detergents also work well.

For surfaces with heavier oil or dirt buildups, stronger solvents, such as acetone or methyl ethyl ketone, may be necessary. Along with these products, there are a number of chemical cleaners on the market that are specifically formulated for preparing galvanized substrates. These products provide good alternatives to dangerous, explosive solvents and are effective at removing surface contaminants and portions of the oxide and hydroxide films.

To achieve good results with solvents and detergents, special cleaning procedures must be followed. Wiping rags and solvent and detergent cleaning pails should be changed frequently to ensure that all residual oil is removed. Thorough rinsing is also important. The use of high pressure water is necessary for removing detergent residue that can interfere with paint adhesion.

**Wash priming**

Wash or etch primers have been successfully used to passivate zinc surfaces for painting. The primers create a finish that is conducive to a range of coatings through the conversion of resin into a relatively insoluble film. Wash primers are applied through spray application in one coat of usually 0.5 mil or less. They dry in 15-30 min and can be recoated in under 1 hr. To maximize the neutralizing effect of

these primers, topcoating must be performed as soon as possible, usually within 4 hr.

**Selecting the right coating**

Equally important as surface preparation is proper coating selection. Typically, a galvanized coating system involves a primer and topcoat. However, some coatings now on the market are self-priming and may be applied directly to properly prepared galvanized surfaces.

Just as with any coating application, the type of system employed is dependent on specific performance requirements and environmental factors. Selection of the right system is as much a matter of knowing what doesn't work well as what does.

For mild to moderately corrosive environments, direct-to-metal acrylics are a good choice. These coatings provide superior adhesion, are corrosion resistant, and exhibit superior gloss, color retention, and flexibility. They can be used as an intermediate/finish coat over a wash primer or applied directly to the galvanized substrate as a topcoat.

In aggressive environments where enhanced chemical resistance and durability are needed, certain types of epoxies are most appropriate. Polyamide epoxies are commonly used as primers with amine epoxy topcoats. This type of system offers superior adhesion and water and chemical resistance for the highest level of protection.

Traditional alkyds and oil-based coatings should never be considered as primers or topcoats on galvanized steel. The alkaline surface generated by zinc causes these types of coatings to saponify or turn to soap. As a result, peeling and flaking occur quite early, despite initial satisfactory adhesion. *Reprinted with permission from PLANT ENGINEERING magazine, April 1998, "Painting Galvanized Surfaces Successfully."*

# Technical Information

## Non-Metallic Properties

### Physical Properties Of Non-Metallic Materials

Table 7 provides technical data for assistance in evaluating non-metallic enclosures and selecting the materials used with Legacy fiberglass enclosure accessories. Additional considerations for inclusion in the fiberglass enclosure specification are:

- The resin system shall be pigmented grey unless otherwise specified.
- The resin system shall include a flame retardant to obtain a flammability rating which meets UL 94-5V.
- The heat distortion temperature shall be at least 350°F.

- Standard cover screws shall be stainless steel or stainless steel with fiberglass encapsulated heads. Other hardware items such as hinges and latches shall be stainless steel or fiberglass construction.
- External mounting feet shall be molded or securely attached to the enclosures to provide a corrosion resistant surface mounting system.

Materials Typical Properties	Test Method ASTM	Polyester Fiberglass (SMC)	Polyester Fiberglass Hand Lay-up	Polyester Fiberglass Pultrusion	Acrylic Sheet for Windows	Dispensed Silicone Gaskets	Foamed Urethane Gaskets	Extruded Silicone Gaskets	Neoprene Gaskets
Flexural Strength (psi)	D 790	18K	30K	45K	16K	N/A	N/A	N/A	N/A
Notched Izod (ft - lb/in @ 1/8")	D 256	7-22	5-30	25	0.3-0.4	N/A	N/A	N/A	N/A
Impact Resistance (lb-in)	UL 746C	≥216	—	—	—	N/A	N/A	N/A	N/A
Compressive Strength (psi)	D 695	20K	35K	26K	18K	N/A	N/A	N/A	N/A
Tensile Strength (psi)	D 638	8K	17.5K	40K	10.5K	200	60	100	500
Specific Gravity	D 792	1.77	1.5-2.1	1.7	1.17-1.20	1.32	0.3	0.55	1.24
Flammability	UL 94	V-0 & V-5	—	V-0	—	—	—	—	—
Heat Deflection (°F at 264 psi)	D 648	375-500	>400	<400	205	N/A	N/A	N/A	N/A
Service Temperature Range (°F)		-40°F to 250°F	-40°F to 250°F	-40°F to 250°F	-31°F to 180°F	-40°F to 350°F	-40°F to 200°F	-100°F to 500°F	-40°F to 225°F
K Factor, Thermal Conductivity (BTU/hr/ft²°F/in)		1.68	1.68	1.68	1.3	1.3	1.0	1.3	1.45
Dielectric Strength (VPM)	D 149	380	380	200	500	400	330	400	400
Arc Resistance (sec)	D 570	200+	200+	80	No Track	N/A	N/A	N/A	N/A
Water Absorption (% in 24 hr)	D 570	0.10-0.25	0.05-0.5	0.05-0.5	<0.4	0.12-0.15	<2	5	—
Hardness (Barcol-Rockwell M-Shore A)		50-70 Barcol	60-80 Barcol	50 Barcol	105 Rockwell	18 Shore	8 Shore	—	15-95 Shore
Shrinkage in/in Minimum		.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elongation (%)		N/A	N/A	N/A	N/A	850	100	400	100-800
Compression Set 24 hr @ 50%, 72°F		N/A	N/A	N/A	N/A	<5%	<2%	<5%	15-60

— no test data available  
K = 1000  
N/A not applicable  
all materials are UL listed

# Technical Information

## Non-Metallic Properties

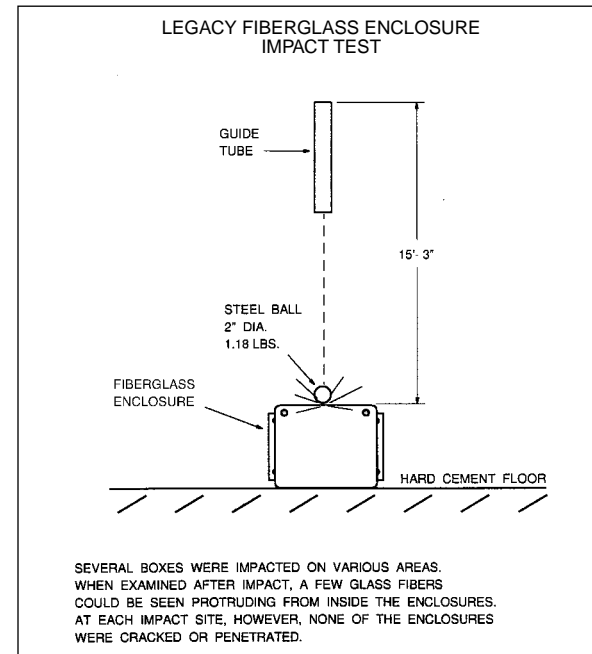
### Enclosure Load Capacity

Large control enclosures can support 200 lbs of equipment on the back panel. Smaller junction and instrumentation enclosures should be limited to 75 lbs. Listed values assume the enclosure is vertically mounted against a reasonably flat surface and are based on a minimum safety factor of two.

### Maximum Temperature Rating

The deflection temperature\* of polyester fiberglass ranges from 375-500°F. Rittal has conducted tests on enclosures at sustained temperatures of 350°F. Polyester fiberglass is a high temperature material compared to other polymers such as PVC, polycarbonate or engineered thermoplastics. In elevated temperature applications, the highest temperature an enclosure can withstand depends on other components used in the finished product. Such items as PVC air vents, and special gaskets must be considered when establishing a temperature limit for both fiberglass and metal enclosures. Many times this issue is neglected or minimized when rating the product.

\*Deflection temperature: The temperature when a material will deflect (distort) under a flexural load of 264 psi. See ASTM D 648.



Integrity of the enclosure was not compromised

### Sunlight (UV) Resistance

In time, sunlight may roughen the fiberglass enclosure surface, but its electrical and mechanical properties remain unaffected. Surface roughening caused by UV exposure is a common phenomenon encountered with virtually all fiberglass products, but it only affects surface appearance. Tests have confirmed the effect on polyester fiberglass is only 40 to 80 microns (0.0015"-0.003") in depth. If appearance is a concern, an outdoor acrylic paint (clear or pigmented) will provide protection for many years. Most acrylic paints in ordinary spray cans work well.

### Drilling, Sawing, Cutting and Punching

Installers find fiberglass easy to cut or drill. Ordinary drills, hacksaws, hole saws and punches cut through fiberglass with little effort. In large installations requiring many holes, glass abrasion may cause tools to become dull over time. Carbide tip tools work best for such applications. For maximum accuracy, routing of openings is recommended.

### Impact Resistance

Rittal's Legacy fiberglass enclosures are quite resistant to damage caused by falling tools or flying debris. When tested in accordance with UL Standard 746C, Section 24, these fiberglass enclosures withstood an impact in excess of 216 lbs/inches. The test was performed by dropping a 2" diameter solid steel ball on various areas of the enclosure from a height of 15 ft. The impact force from such a test is comparable to dropping a large wrench from 3 or 4 ft. The durability results from randomly oriented glass reinforcing fibers incorporated in all designs.

# Technical Information

## National Electrical Code Allowable Conductor Ampacity

**Table 310-16**

Allowable ampacities of insulated conductors rated 0-2000 Volts, 60° to 90°C (140° to 194°F) NOT MORE THAN THREE CONDUCTORS in raceway or cable or earth (directly buried), based on air ambient temperature of 30°C (86°F).

Size AWG kcmil	Temperature Rating of Conductor		
	60°C (140°F) Type TW†, UF†	75°C (167°F) Type FEPW†, RH†, RHW†, THHW†, THW†, THWN†, XHHW†, USE†, ZW†	90°C (194°F) Type TA, TBS, SA, SIS, FEP†, FEPB†, MI, RHH†, RHW-2, THHN†, THHW†, THW-2, THWN-2, USE-2, XHH, XHHW†, XHHW-2, ZW-2
		Copper	
18	—	—	14
16	—	—	18
14	20 †	20 †	25 †
12	25 †	25 †	30 †
10	30	35 †	40 †
8	40	50	55
6	55	65	75
4	70	85	95
3	85	100	110
2	95	115	130
1	110	130	150
1/0	125	150	170
2/0	145	175	195
3/0	165	200	225
4/0	195	230	260
250	215	255	290
300	240	285	320
350	260	310	350
400	280	335	380
500	320	380	430
600	355	420	475
700	385	460	520
750	400	475	535
800	410	490	555
900	435	520	585
1000	455	545	615
1250	495	590	665
1500	520	625	705
1750	545	650	735
2000	560	665	750

† Unless otherwise specifically permitted elsewhere in this Code, the overcurrent protection for conductor types marked with an obelisk (†) shall not exceed 15 amperes for No. 14, 20 amperes for No. 12, and 30 amperes for No. 10 copper, after any correction factors for ambient temperature and number of conductors have been applied.

### Temperature Correction Factors

For ambient temperatures other than 30°C (86°F), multiply the allowable ampacities shown above by the appropriate factor shown below.

Ambient Temp. °C	60°C	75°C	90°C
30	1.00	1.00	1.00
40	.82	.88	.91
50	.58	.75	.82
60	—	.58	.71
70	—	.33	.58
80	—	—	.41

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**Table 310-17**

Allowable ampacities of single insulated conductors, rated 0-2000 Volts, in free air, based on ambient air temperature of 30°C (86°F).

Size AWG kcmil	Temperature Rating of Conductor		
	60°C (140°F) Type TW†, UF†	75°C (167°F) Type FEPW†, RH†, RHW†, THHW†, THW†, THWN†, XHHW†, ZW†	90°C (194°F) Type TA, TBS, SA, SIS, FEP†, FEPB†, MI, RHH†, RHW-2, THHN†, THHW†, THW-2, THWN-2, USE-2, XHH, XHHW†, XHHW-2, ZW-2
		Copper	
18	—	—	18
16	—	—	24
14	25 †	30 †	35 †
12	30 †	35 †	40 †
10	40 †	50 †	55 †
8	60	70	80
6	80	95	105
4	105	125	140
3	120	145	165
2	140	170	190
1	165	195	220
1/0	195	230	260
2/0	225	265	300
3/0	260	310	350
4/0	300	360	405
250	340	405	455
300	375	445	505
350	420	505	570
400	455	545	615
500	515	620	700
600	575	690	780
700	630	755	855
750	655	785	885
800	680	815	920
900	730	870	985
1000	780	935	1055
1250	890	1065	1200
1500	980	1175	1325
1750	1070	1280	1445
2000	1155	1375	1560

### Adjustment Factors For More Than Three Current-Carrying Conductors In A Raceway Or Cable.

Where the number of current-carrying conductors in a raceway or cable exceeds three, the allowable ampacities shall be reduced as shown in the following table.

Number of current-carrying conductors	Percent of values in tables as adjusted for ambient temperature if necessary
4 through 6	80
7 through 9	70
10 through 20	50
21 through 30	45
31 through 40	40
41 and above	35



# Technical Information

## Conversions and Formulas

### British And U.S. Dimensions For Cables And Lines

AWG No.	Diameter mm	Cross-section mm <sup>2</sup>	Conductor resistance Ω/km
500	17.96	253	0.07
350	15.03	177	0.1
250	12.7	127	0.14
4/0	11.68	107.2	0.18
3/0	10.4	85	0.23
2/0	9.27	67.5	0.29
1/0	8.25	53.5	0.37
1	7.35	42.4	0.47
2	6.54	33.6	0.57
4	5.19	21.2	0.91
6	4.12	13.3	1.44
8	3.26	8.37	2.36
10	2.59	5.26	3.64
12	2.05	3.31	5.41
14	1.63	2.08	8.79
16	1.29	1.31	14.7
18	1.024	0.823	23

### Formulas For Electrical Motors

To find	Direct current	Single phase	Three phase
Horse Power	$\frac{E \times I \times \text{EFF}}{746}$	$\frac{E \times I \times \text{EFF} \times \text{PF}}{746}$	$\frac{1.732 \times E \times I \times \text{EFF} \times \text{PF}}{746}$
Current	$\frac{746 \times \text{HP}}{E \times \text{EFF}}$	$\frac{76 \times \text{HP}}{E \times \text{EFF} \times \text{PF}}$	$\frac{746 \times \text{HP}}{1.732 \times E \times \text{EFF} \times \text{PF}}$
Efficiency	$\frac{746 \times \text{HP}}{E \times I}$	$\frac{746 \times \text{HP}}{E \times I \times \text{PF}}$	$\frac{746 \times \text{HP}}{1.732 \times E \times I \times \text{PF}}$
Power Factor	—	$\frac{\text{Input Watts}}{E \times I}$	$\frac{\text{Input Watts}}{1.732 \times E \times I}$

E = Volts    EFF = Efficiency (decimal)    HP = Horsepower    I = Amperes    PF = Power factor (decimal)

### Formulas For Electrical Circuits

To find	Direct current	Single phase	Three phase
Amperes	$\frac{\text{Watts}}{\text{Volts}}$	$\frac{\text{Watts}}{\text{Volts} \times \text{Power Factor}}$	$\frac{\text{Watts}}{1.732 \times \text{Volts} \times \text{Power Factor}}$
Volt-Amperes	—	Volts x Amperes	1.732 x Volts x Amperes
Watts	Volts x Amperes	Volts x Amperes x Power Factor	1.732 x Volts x Amperes x Power Factor

### References Formulas

OHMS Law	Capacitance in microfarads at 60 HZ
Ohms = Volts/Amperes (R = E/I)	Capacitance = $\frac{2650 \times \text{Amperes}}{\text{Volts}}$
Amperes = Volts/Ohms (I = E/R)	Capacitance = $\frac{2.65 \times \text{kVAR}}{(\text{Volts})^2}$
Volts = Amperes x Ohms (E = IR)	

Length	Multiply By
1 inch = 25.4 mm	? x 25.4 = mm
1 inch = 2.54 cm	? x 2.54 = cm
1 foot = 304.8 mm	? x 304.8 = mm
1 foot = 30.4 cm	? x 30.4 = cm
1 foot = .304 m	? x .304 = m
1mm = .039 inch	? x .039 = inch
1cm = .394 inch	? x .394 = inch
1m = 39.37 inch	? x 39.37 = inch
1m = 3.28 ft.	? x 3.28 = ft.
1m = 1.09 yds.	? x 1.09 = yds.
1 lb = .454 kg	? x .454 = kg
1 kg = 2.2 lbs	? x 2.2 = lbs
1 BTU = .29 watts	? x .29 = watts
1 watt = 3.412 BTU	? x 3.412 = BTU
1cfm = .591 cmh	? x .591 = cmh
1 cmh = 1.692 cfm	? x 1.692 = cfm
1 newton = .225 lb	? x .225 = lb
1 lbf = 4.45 newton	? x 4.45 = newton
1 Kilopascal = 0.14504 lbf/in <sup>2</sup>	? x .14504 = lbf/in <sup>2</sup>

Metal Gauge Thickness		
Gauge	Inches	Metric
7 gauge	.179	4
8 gauge	.164	4
9 gauge	.150	4
10 gauge	.134	3.5
11 gauge	.120	3
12 gauge	.105	2.5
13 gauge	.090	2
14 gauge	.075	2
16 gauge	.060	1.8
18 gauge	.048	1.5
20 gauge	.036	1.2

# Climate Control

## Heat Removal From Enclosures

### Introduction

Electronics, and especially micro-electronics, have made modern production technology more efficient. But ever smaller electronic components and increasingly dense packaging in enclosures have also made these complex systems more sensitive to external influences such as temperature, dust, oil, and humidity.

This can cause problems because the failure of just one electronic component may lead to the complete shutdown of an entire assembly line. Resultant costs quickly add up.

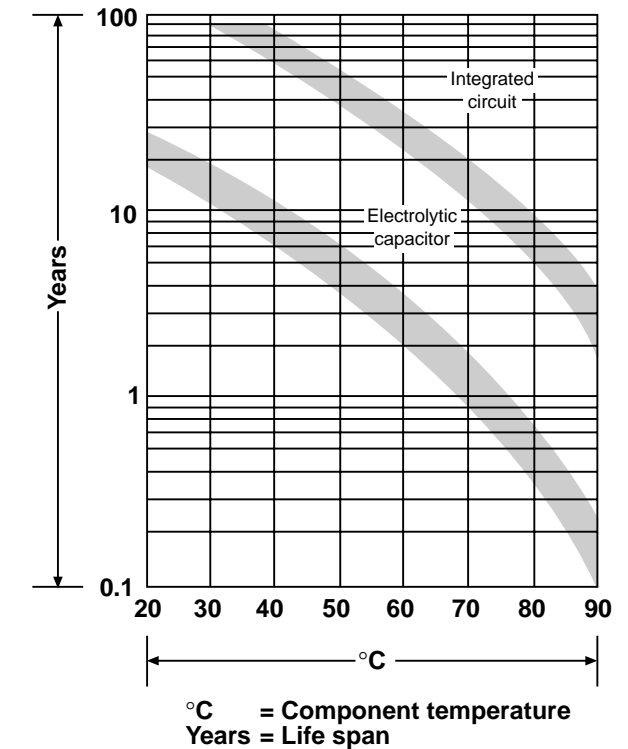
Heat especially is the number one enemy of sensitive micro-electronics.

A rule of thumb says that the average life span of semi-conductors is cut in half every time the operating temperature increases 20°F (11°C) over its maximum operating temperature. Yet, high temperatures in enclosures can hardly be avoided because electric equipment such as transformers, power distribution components, programmable controllers, and electronic components all generate heat, also known as power loss.

Power related temperature swings in an enclosure or electronic housing can also be considerable. These swings cause stress and premature aging of electronic components which in turn lead to premature failure.

As mentioned, correct functioning of electronic systems and problem free operation of entire assembly lines depends to a great degree on removing the heat that is generated in enclosures or electronic cabinets. In principle, there are three different

Relationship between electronic component life and temperature



ways in which heat can be dissipated: conduction, convection, and radiation.

With **conduction**, matter itself moves heat, without itself moving, energy is passed on from molecule to molecule.

With **convection**, heat is moved through a medium (another material such as a gas or a liquid), the medium absorbs energy in the form of heat and releases energy as heat.

With **radiation**, heat is transferred from one body to another in the form of radiation energy, without any physical matter in between.

Conduction and convection play an important role in enclosures and electronic cabinets; radiation is not a big factor.

An important criterion for heat removal from enclosures is whether the enclosure is an 'open' (air can freely stream through) or 'closed' (air-tight) system. While heat naturally dissipated from the inside of an 'open' enclosure through a flow of air, heat can only be dissipated from a 'closed' system through the walls and roof.

# Climate Control

## Heat Removal From Enclosures

### Specification Fundamentals

To properly determine the specifications of climate control components, a few simple calculations have to be made. The following terms are used:

- $Q_v$  [Watt]: total power loss (heat loss) of all electric and electronic components that are installed in the enclosure.
- $Q_s$  [Watt]: heat dissipation, or absorption, through the outside surfaces of the enclosure (per VDE 0660, part 500). When the temperature inside the enclosure is higher than the ambient temperature ( $T_i > T_u$ ), heat will be radiated from the enclosure ( $Q_s > 0$ ). When the temperature inside the enclosure is lower than the ambient temperature ( $T_i < T_u$ ), the enclosure will absorb heat from its environment ( $Q_s < 0$ ).
- $Q_c$  [Watt]: required cooling capacity of a climate control component; this is the amount of heat a component must remove from the enclosure.
- $Q_h$  [Watt]: required heating capacity of an enclosure heater.
- $T_i$  [°C]: maximum allowable temperature inside the enclosure per the electronic component manufacturer - usually between +35°C and +45°C.
- $T_u$  [°C]: maximum ambient temperature at which all electronic components inside an enclosure or electronic cabinet should perform faultlessly.
- $V$  [m³/h]: required air displacement for a filter fan.
- $A$  [m²]: exposed enclosure surface accordance with DIN 57 600, part 500 or VDE 0660, part 500.
- $K$  [W/m²K]: heat transfer coefficient of an enclosure:  
sheet steel - 5.5 W/m²K  
plastic - 3.5 W/m²K

Table 8	
Location of enclosure per VDE 0660, part 500	
<ul style="list-style-type: none"> <li>■ Single enclosure, freestanding</li> <li>▲ Single enclosure, against a wall</li> <li>⊕ First/last enclosure of a suite, freestanding</li> </ul>	<ul style="list-style-type: none"> <li>◆ First/last enclosure of a suite, against a wall</li> <li>♣ Enclosure within a suite, freestanding</li> <li>★ Enclosure within a suite, against a wall</li> <li>● Enclosure within a suite, against a wall, with covered roof</li> </ul>
Location per VDE 0660/500	Formula for calculation of A [m²]
■	$A = 1.8 \times H \times (W+D) + 1.4 \times W \times D$
▲	$A = 1.4 \times W \times (H+D) + 1.8 \times D \times H$
⊕	$A = 1.4 \times D \times (H+W) + 1.8 \times W \times H$
◆	$A = 1.4 \times H \times (W+D) + 1.4 \times W \times D$
♣	$A = 1.8 \times W \times H + 1.4 \times W \times D + D \times H$
★	$A = 1.4 \times W \times (H+D) + D \times H$
●	$A = 1.4 \times W \times H + .7 \times W \times D + D \times H$
	H = enclosure height [m] W = enclosure width [m] D = enclosure depth [m]

#### Calculation of exposed enclosure surface

Special attention should be paid to the total exposed enclosure surface because heat loss dissipated from the enclosure depends not only on its actual value, but also on the enclosure's location. An enclosure that stands all by itself in the middle of a room can dissipate more heat than an enclosure that is placed next to a wall or in a corner. For that reason there are special directions on how the total exposed enclosure surface should be calculated depending on its location. These formulas for the calculation of A (see table above) are specified in DIN 57 660, part 500 or VDE 0660, part 500 (see table).

#### Inherent convection

Inherent convection is the dissipation of heat through the enclosure walls. For this to happen, the ambient temperature must be lower than the temperature in the enclosure. The maximum temperature increase ( $\Delta T$ )<sub>max</sub> that can occur as against the ambient temperature can be calculated with the following formula:

$$(\Delta T)_{\max} = \frac{Q_v}{k \cdot A}$$

Note:

When the heat loss within an enclosure is unknown, but the actual ambient temperature  $T_u$  and the temperature  $T_i$  inside the enclosure can be determined, the actual heat loss can be calculated with the following basic formula:

$$Q_v = A \cdot k \cdot \Delta T \text{ [Watt]}$$

This measurement must be taken with the enclosure sealed and no fans, heat exchangers or air conditioners operating.

# Climate Control

## General Information

### The Need For Climate Control

When the expense of electronic and electrical components and the costly implications of a system's down time are considered, it is important that all reasonable steps are taken to ensure that steady and reliable performance of a system continues. This should, in almost all circumstances, include climate control — cooling and/or heating.

### The Purpose Of Cooling

Electronic and electric equipment often generate a great deal of heat during operation. Frequently located in hostile environments, the equipment may also encounter the additional problem of not having safe, clean air available to dissipate

unwanted heat. Such adverse conditions affect the performance and the life expectancy of electrical/electronic system components.

Rittal cooling devices are precisely designed to solve the problems of internal heat build-up above component tolerances, excessive ambient temperatures, moisture and contaminant laden atmospheres and corrosive environments, which can affect sensitive electronic equipment. A little time and effort spent early in the design process can save a great deal of trouble and expense later by preventing the need to retrofit with proper cooling devices in the field during a down time situation.

### Information Needed For Climate Control Selection

The following information should be on hand to properly size cooling products:

- (1) Heat to be dissipated (Watts) by the electrical components inside the enclosure
- (2) Maximum temperature expected outside enclosure (°F)
- (3) Maximum allowable internal enclosure temperature (°F)
- (4) Enclosure dimensions
- (5) Mounting portion of enclosure, i.e. against wall, freestanding, in a suite of enclosures, etc.

## Request For Climate Control Application Information

**To: Rittal Corporation**  
**1 Rittal Place**  
**Springfield, Ohio 45504**  
**Climate Control Group**  
**Applications Engineer**

**Tel. (937) 399-0500**  
**FAX (937) 390-8392**  
**e-mail: Climate-ctrl@rittal-corp.com**

**Date:** \_\_\_\_\_  
**Page 1 of:** \_\_\_\_\_

Company: \_\_\_\_\_ Address: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Tel.: \_\_\_\_\_ Project Name/Number: \_\_\_\_\_

Title: \_\_\_\_\_ Fax: \_\_\_\_\_

### Application Questionnaire

1. What is the maximum ambient air temperature? \_\_\_\_\_°F
2. What is the maximum allowable internal enclosure temperature? \_\_\_\_\_°F
3. What is the size and mounting style of the enclosure to be heated or cooled? H \_\_\_\_ W \_\_\_\_ D \_\_\_\_ Mounting: \_\_\_\_\_ (freestanding, wall, suited)
4. a: What is the measured temperature difference between the outside and inside of the enclosure with the door closed and any vents or openings sealed \_\_\_\_\_°F  
 or  
 b: How many Watts or BTUs of heat is given off by the equipment inside the enclosure? \_\_\_\_\_
5. At what voltage and frequency is the climate control device required to operate? Voltage \_\_\_\_\_ and \_\_\_\_\_ Hz
6. Is chilled water available for use in conjunction with an air/water heat exchanger? If no, is a chilled water cooling system a viable option? \_\_\_\_\_
7. Is there a specific NEMA or approval rating that the climate control equipment needs to comply with? NEMA \_\_\_\_\_ UL \_\_\_\_\_ CE \_\_\_\_\_ CSA \_\_\_\_\_
8. Estimated project commercialization date \_\_\_\_\_
9. Estimated annual climate control product volume \_\_\_\_\_ units/year
10. Special requirements or considerations \_\_\_\_\_

# Climate Control

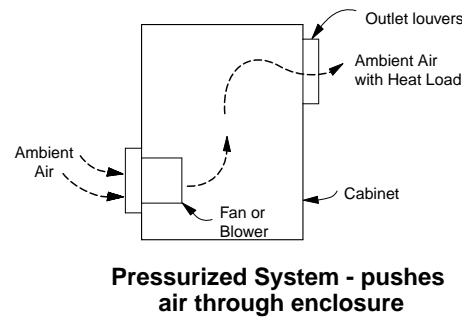
## General Selection Considerations

### Three Basic Cooling Methods

When selecting a cooling method there are three types to consider.

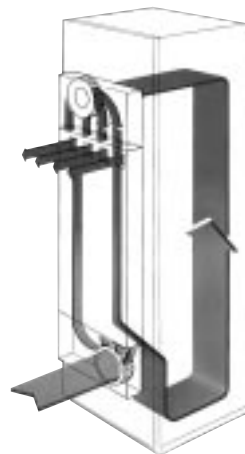
- (1) **Passive Ventilation** - If there is only a minimal heat gain in your circumstance and the ambient air is relatively cool and clean, then the use of louvers or grilles with filters can be effective. This method, however, usually provides less cooling effect than is necessary with today's components. The temperature rise within a sealed enclosure is seen in Figure 2.
- (2) **Forced Convection Air Cooling** - If the installation will be in a clean, non-hazardous environment with an acceptable ambient (outside the enclosure) temperature range, a simple forced-air cooling system utilizing outside air is usually adequate. Combined with an air filter, such devices generally meet the heat removal needs of typical electronic equipment and many electrical applications (Fig. 1). Examples of forced convection air cooling are filter fans, pagoda roof fans, fan trays, and blowers of various types.

**FIGURE 1 - Forced Convection Method**



### Fans And Blowers Can Be Used To Pressurize (Preferred) Or Exhaust Cabinet Air. The Ambient Air Should Be Filtered Before It Enters The Cabinet.

- (3) **Closed-Loop Cooling** - In harsh environments involving high temperatures, wash-down requirements, heavy particulate matter or the presence of chemicals capable of damaging components (NEMA 4 or 12 environments), ambient air must be kept out of the enclosure. Closed-loop cooling consists of two separate circulation systems. One system, sealed against the ambient air, cools and recirculates the clean cool air throughout the enclosure. The second system uses ambient air or water to remove and discharge the heat. Examples of closed-loop cooling equipment employed with electronics and process controls are heat exchangers and air conditioners. Blowers are used in higher static pressure applications (when internal equipment is densely packed), and are at maximum efficiency when operating near their peak static pressure.



# Climate Control

## Technical Information

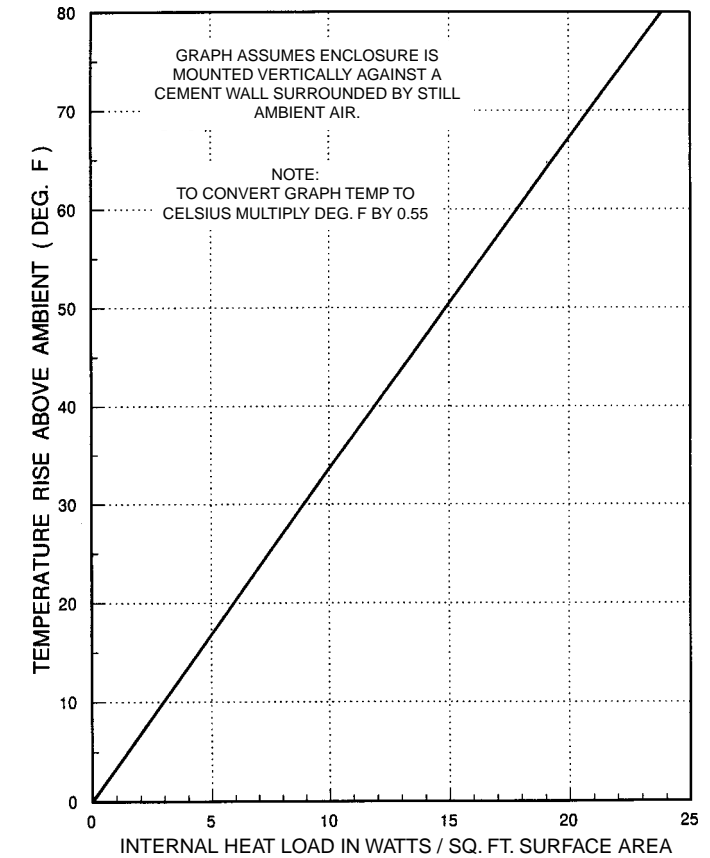
This temperature graph was developed through empirical testing using several enclosures of various sizes.

The temperatures represent an average of one temperature measurement near the bottom of the enclosure and a second measurement near the top. Electric heaters mounted equidistant from the internal surfaces of the enclosure were used as the heat source. Because hot air rises, a significant temperature gradient occurred from top to bottom. Typical of an actual installation, the top was much hotter than the bottom.

The placement of internal parts can affect temperature and enclosures should be sized liberally in applications where temperature rise is critical. Recall that a larger enclosure with twice the surface area reduces the temperature rise by 50%.

Exterior surface finishes significantly influence temperature rise in outdoor applications. For example, painted steel and fiberglass enclosures dissipate heat better than unfinished aluminum enclosures, even though aluminum has superior thermal conductivity, because the colored surfaces of fiberglass and painted steel enclosures are more efficient thermal radiators than unfinished aluminum. Painted surfaces have an emissivity of 0.96 whereas an unfinished aluminum surface has an emissivity of 0.45. In outdoor applications light colored enclosures have a high reflectance which minimizes solar heat gain while dissipating internally generated heat at about the same rate as a similar size dark colored enclosure.

**FIGURE 2 - Internal Temperature Rise vs. Internal Heat Load**





# Climate Control

## Technical Information

### Additional Cooling Methods

When it has been determined that the heat load is too large for an enclosure to dissipate by radiation and convection, the following supplemental cooling methods are available:

### Louvers And Special Ventilation Slots

Louvers and special ventilation slots are designed to remove heat from the enclosure by allowing natural air circulation around the heat source and exhausting the hot air through slots or louvers. This method is relatively inexpensive and has no operating cost; however, it can only be used to dissipate a limited amount of heat and it is difficult to predict the temperature drop produced by a vent utilizing natural convection. This method should not be used in areas where contaminants will enter the enclosure.

### Circulating Fans

In larger sealed enclosures, a fan can be used to circulate the air and reduce localized heat concentrations; however, the applications are limited because a closed system fan only redistributes heat, it does not remove the heat generated by the hot spot.

Where an enclosure does not need to be sealed from the outside environment, fans can be used to circulate air through an enclosure and dissipate the heat generated by power supplies, transformers and other heat producing equipment. Fans can provide as much as 10 times the heat transfer rate of natural convection and radiation. Once the heat input in watts/ft<sup>2</sup> is determined and temperature rise is established from Figure 2, the following equation can be used to calculate the fan flow rate:

$$\text{Fan Flow Rate (cfm)} = \frac{3.17 \times \text{Internal Heat Load (watts)}}{\text{Temperature Rise}}$$

### Example

Equipment in an E 363612 enclosure generates sufficient heat to require a fan which will dissipate 300 watts. The maximum ambient temperature in the application environment is 115°F. If the temperature of the other contents in the enclosure cannot exceed 125°F, what size fan is required?

The allowable temperature rise is 125°F - 115°F = 10°F. The application requires dissipation of 300 watts.

### Solution

To determine the cubic feet per minute (cfm) required in a standard application, use the following equation (if the air density is significantly more than 0.075 lbs per cubic foot, a non-standard application exists and this equation should not be used):

$$\text{Fan Flow Rate (cfm)} = \frac{3.17 \times 300 \text{ watts}}{10^\circ\text{F}}$$

$$\text{Fan Flow Rate (cfm)} = 95 \text{ cfm}$$

This calculation is exact, but adding an additional 25% capacity to the level is standard to provide a safety factor.

$$1.25 \times \text{Fan Flow Rate (cfm)} =$$

$$1.25 \times 95 \text{ cfm} = 119 \text{ cfm}$$

If the air density is non-standard (significantly more than 1.075 lb. per cubic foot), the following equation can be used to calculate the fan capacity:

$$\text{Fan Flow Rate (cfm)} \times 0.075 \text{ lb. per cubic foot} / \text{Non-standard Air Density (lb. per cubic foot)}$$

Fans can be used to draw air through an enclosure and exhaust hot air from an enclosure or to draw cool air into and circulate it through an enclosure. An inlet fan offers the following advantages:

- Raises the internal pressure which helps keep dust and dirt out of an unsealed or frequently open enclosure.
- More turbulent air flow improves heat transfer.
- Longer fan life in cooler incoming air.

*The following considerations are important in locating a fan:*

- Avoid placing transformers, power supplies or other heat generating devices in front of the fan. Although this cools the device, it increases the heat load on other devices within the enclosure. It is best to place these devices near the exhaust outlet.
- To achieve maximum cooling, the inlet and outlet should be separated by the maximum distance. If the outlet and inlet are adjacent to each other, the hot outlet air will be drawn into the inlet and cooling efficiency will be reduced. In general, the inlet should be at the bottom of the enclosure and the outlet at the top.

# Climate Control

## Technical Information

- Fans should not be used or located in areas where the air flow is restricted. A plenum is recommended to accelerate air velocity and improve fan performance. A plenum is particularly helpful when a filter is used where airborne contaminants are a problem.
- The air outlet area should at least equal the inlet area. For best results the exhaust opening should be 1.5 times the area of the fan opening.
- Air is less dense at high altitudes. For this reason air flow should be increased in high altitude applications.
- All fans used in parallel should be identical.

### Heat Exchangers - Cooling

Applications requiring sealed enclosures present the greatest need for cooling to maintain safe operating temperatures. Heat exchangers are a good option when precise control of heat and humidity are not required and the heat transfer requirements are significant. The required heat exchanger capacity can be calculated using the formula,

$$\text{Heat Exchanger Capacity (watts/}^\circ\text{C)} = \frac{\text{Internal Heat Load T} + 5.5\text{w/m}^2\text{-C} \times \text{Enclosure Surface Area} \times \Delta\text{T}}{\Delta\text{T}}$$

where ΔT = Temperature Rise.

### Example

If the internal heat load is 1000 watts in an E 603620 freestanding steel enclosure, what is the minimum cooling capacity for the heat exchanger unit? The maximum ambient temperature is 105°F and the internal equipment will malfunction if the internal enclosure temperature exceeds 130°F.

$$\text{Internal Heat Load} = 1000 \text{ watts}$$

$$\text{Maximum Temperature Differential} = T_i - T_o = 105^\circ\text{F} - 130^\circ\text{F} = -25^\circ\text{F} = -14^\circ\text{C}, \text{ use Absolute Value.}$$

$$\text{Enclosure Surface Area} = 56.7 \text{ ft}^2 = 5.3\text{m}^2 \text{ from Table 1.}$$

$$\text{Heat Exchanger Capacity} = \frac{1000 - 5.5 \times 5.3 \times 14}{14} = 42\text{w/c}$$

In this example, the surface area acts to cool the enclosure and is subtracted, the Absolute Temperature Value is used because this is a temperature difference.

### Air Conditioning - Cooling

Air conditioning will be required in high ambient temperature locations where precise temperature control and humidity reduction are required in a sealed enclosure. Air conditioning can also be required where neither convection, thermal radiation, louvers, slots nor a circulating fan system provide adequate cooling. Because air conditioners remove moisture from the enclosure, a condensate drain is generally required.

The four step process to size and select the air conditioner is influenced by the internal heat load, enclosure size and the application environment. The following information is required:

### Step 1. Determine the Internal Heat Load

Heat generated by all sources within the enclosure shall be added together to establish the internal heat load in watts. The heat load in watts may be multiplied by 3.413 to convert to BTU/hr.

$$\text{Internal Heat Load} \times 3.413 \text{ BTU/hr/watt} = \text{BTU/hr.}$$

### Step 2. Calculate the Surface Area of the Enclosure

The enclosure surface area calculation is made in Table 1 using formulas.

The surface area for an enclosure with a height (H = 16 in); a width (W = 20 in); and a depth (D = 8 in); is:

$$\text{Surface Area} = [1.8(16 \times 20) + 1.8(16 \times 8) + 1.4(20 \times 8)]/144\text{in}^2 = 7.2 \text{ ft}^2 = 0.67\text{m}^2$$

Using the H, W and D dimensions, select the appropriate formula and calculate the surface area for your enclosure application:

$$H = \text{_____}$$

$$W = \text{_____}$$

$$D = \text{_____}$$

$$\text{Surface Area} = \text{_____n}^2$$

### Step 3. Establish the Temperature Differential

The temperature differential (ΔT) is calculated by subtracting the maximum allowable temperature inside the enclosure (T<sub>i</sub>) from the maximum ambient temperature outside the enclosure (T<sub>o</sub>).

$$T_o - T_i = \Delta T = \text{_____}^\circ\text{C}$$

### Step 4. Calculating the Required Air Conditioning Capacity

The values determined in the first three steps are used to calculate the required capacity of the air conditioner according to the following formula,

$$\text{Cooling Capacity (BTU/hr)} = \text{Surface Area} \times \Delta T \times K + \text{Internal Heat Load,}$$

where

$$K = 1.25 \text{ BTU/hr/ ft}^2 \text{ }^\circ\text{F} (5.5\text{w/m}^2\text{-K})$$

for sheet metal enclosures.



# Climate Control

## Technical Information

### Enclosure Heating

Some enclosure systems have minimum as well as maximum operating temperature limitations. When the equipment in an enclosure must be maintained above a minimum temperature at low ambients, these same equations can be modified and used to calculate the supplemental heat required to select and size the heaters. The only differences are that the internal heat load will help heat the enclosure and the temperature difference,  $\Delta T$ , is calculated by subtracting the minimum ambient temperature ( $T_o$ ) outside the enclosure from the required temperature ( $T_i$ ) inside the enclosure. The minimum supplementary heat can be calculated according to one of the following equations:

$$\Delta T = T_i - T_o$$

Supplementary Heat = Surface Area x  $\Delta T$  x K where K = 0.37 watts/ft<sup>2</sup> °F.

### Example

If the internal heat load is 100 watts in an E 162008 steel enclosure, which is wallmounted, what is the minimum heating capacity for the heating elements? The minimum ambient temperature is 0°F and the internal equipment will malfunction if the internal enclosure temperature drops below 40°F.

$$\begin{aligned} \Delta T &= T_i - T_o = 40^\circ\text{F} - 0^\circ\text{F} = 40^\circ\text{F} \\ &= \\ 6.27 \text{ ft}^2 \times 40^\circ\text{F} \times 0.37 \text{ watts/ft}^2 \text{ }^\circ\text{F} &= \\ &= 93 \text{ watts} \end{aligned}$$

In addition to heating, supplementary heaters are often used in enclosures to keep the internal enclosure ambient temperature a few degrees above the ambient temperature to prevent condensation on internal equipment.

### Equipment for Climate Control

Most cooling or heating requirements can be calculated from the data in this section and the climate control equipment. If you have a problem determining your cooling or heating requirements or selecting the climate control equipment, please contact Rittal.

Rittal's thermal sizing software, Therm 4.0 for Windows, automatically makes calculations for you.

10 Common Pitfalls During Thermal Analysis/Design		
Pitfall		Effect
1. Underestimating maximum ambient temperature		Undersized cooling device — system failure
2. Not considering effect of temperature on performance of an air conditioner		Undersized cooling device — system failure
3. Not derating fan performance for inlet grills, filters, system impedance, etc.		Undersized cooling device — system failure
4. Not considering convective heat loss or gain		Improperly sized cooling device
5. Not accurately estimating component heat loss		Improperly sized cooling device
6. Underestimating component maximum allowable temperature		Oversized cooling device — higher cost
7. Placing cooling device inlets/outlets too close to obstructions		Reduced performance
8. Not specifying necessary filters & maintenance schedule for dirty environments		Reduced performance
9. Not specifying corrosion protection for corrosive environments		System failure
10. Inadequate warning system in the event of cooling failure		Machine shutdown/system failure

# Advantages-At-A-Glance

## Air Conditioners

**Energy efficient design** All Rittal air conditioners come standard with thermostatic expansion valves that operate more efficiently than the expansion devices found on most competitors' units. This can save the end user over \$100 per year per air conditioner.

**Environmentally friendly technology** Our air conditioners come standard with R 134a refrigerant, which is not a CFC or a HCFC. We were the first to convert R 134a and is still the only company with 100% of its product line using this technology.

**Reliability/safety** Our air conditioners come standard with pressostats helping protect against compressor failure. Evaporator housings are insulated to maximize efficiency and minimize condensation. CE compliances also meet new standards for products exported to Europe.

**Low maintenance condenser coils** Rittal's wider condenser fin spacing means less likelihood of dirt clogging, and loss of cooling performance.

**Long life fans & compressors** All Rittal air conditioners come with long-life ball bearing type radial fans. Compressors are thermally protected.

**Advanced microprocessor control** An advanced microprocessor control option allows you to monitor the performance, pinpoints maintenance needs, and enables remote monitoring.

**Installation** Rittal's air conditioners are easily and quickly mounted. Terminal blocks offer quick and easy wiring.

**Availability/spare parts** Rittal has five distribution centers across the U.S., as well as a broad distributor network, for quick access to inventory and spare parts.

**Air conditioner repair and disposal** Rittal has a repair facility in Springfield, OH. We also offer customers refrigerant recovery and disposal services and on-site repair service.

**Broad variety of voltages available** Rittal offers 115V, 230V, 400V, and 460V, 50 Hz and 60 Hz air conditioner models.

**Special features** such as stainless steel housings, environmentally protected coils, Class 1, Div 2 explosion proof upgrades are available.

**Regulatory Compliance** We meet global regulatory requirements such as UL, cUL, GS, CE.

### Practical Hints

Rittal air conditioners offer the right solution whenever optimum operating conditions inside an enclosure are required. Even with high ambient temperatures is it possible to cool the enclosure's internal temperature down to well below the ambient temperature.

In terms of airflow technology the favorable arrangement of air intake and exhaust openings for the internal and external air circulation loops, ensures optimum air circulation in the enclosure.

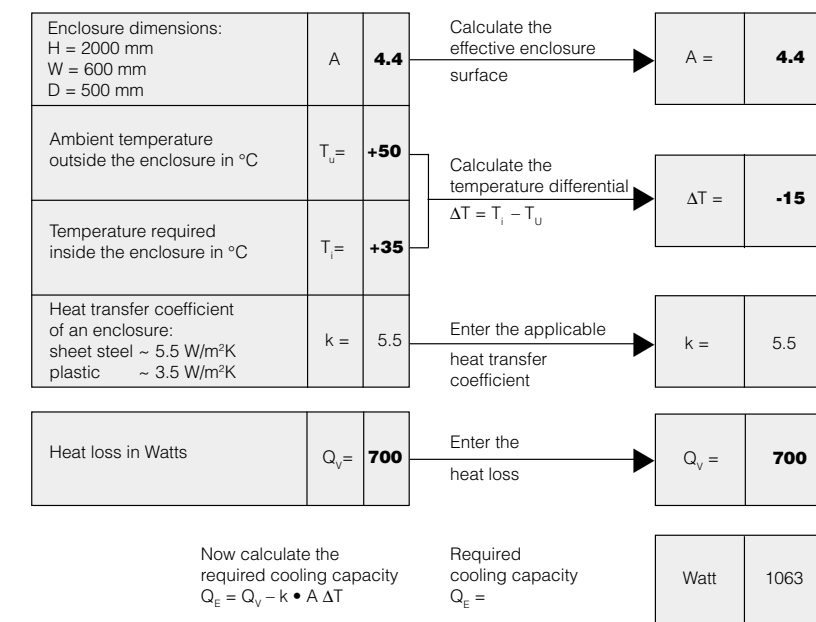
The following example shows how to quickly and accurately calculate the specifications for an enclosure air conditioner.

The following should be taken into consideration:

- Where will the enclosure be located (dust or oil-laden air)?
- What type of location is specified per VDE 0660, part 500?

- What conditions must be anticipated (e.g. ambient temperature and humidity)?
- What is the heat loss  $Q_v$  in the enclosure?
- What is the max. required interior temperature  $T_i$  for the enclosure?
- Is a specific NEMA or IP (per DIN 40 050) protection rating required?
- What voltage is available for air conditioner operation?
- In enclosure suites, it will be necessary to also take into account the heat which may have been absorbed from adjacent enclosures.
- Air conditioners should always be connected via door limit switches to avoid excessive condensation.
- Enclosures and air conditioners should be located and placed so that there is sufficient space for air intake and exhaust.

### How To Determine The Sizing For A Wallmounted Air Conditioner, For The Bold Values:



# Advantages-At-A-Glance

## Air Conditioners

- Air conditioners should be positioned such that air intakes and outlets have at least 8" of clearance from obstructions.
- The enclosure should be sealed to a NEMA 12 standard to avoid condensation.

### Condensation and dehumidification of enclosure air when air conditioners are used

When air conditioners are used, dehumidification of the internal enclosure air is an unavoidable side effect. During the cooling process, a part of the moisture in the air condenses at the evaporator and must be removed from the enclosure. The quantity of condensate depends on the relative humidity, the air temperature at the evaporator as well as on the volume of air inside the enclosure.

The diagram on this page (also called the 'Mollier h-x diagram') specifies the amount of water in the air, contingent on its temperature and relative humidity.

### Example:

A model 3293100 air conditioner is set at  $T_i = 35^\circ\text{C}$ . The relative humidity of the ambient air is 70%. The surface temperature of the evaporator is approx.  $18^\circ\text{C}$  - the evaporation temperature of the refrigerant. When air of  $35^\circ\text{C}$  is blown over the evaporator to be cooled down condensate will form at the surface of the evaporator. The difference  $x = x_1 - x_2$  indicates how much condensate per kg air would accumulate if the air were completely dehumidified. A deciding factor for the amount of condensate is how well the enclosure is sealed off from its environment.

The volume of condensate can be calculated with the following formula:

$$W = V \cdot p \cdot \Delta x$$

where:

W = Quantity of water [g]

V = Volume of the enclosure [ $\text{m}^3$ ]

p = Density of air [ $\text{kg}/\text{m}^3$ ]

$\Delta x$  = Dehumidification [g/kg dry air] per the Mollier h-x diagram

When the enclosure door is closed, only the air within the enclosure will be dehumidified and there will be considerably less condensate than with an open door.

$$V = H \cdot W \cdot D = 2 \text{ m} \cdot 0.6 \text{ m} \cdot 0.5 \text{ m}$$

$$V = 0.6 \text{ m}^3$$

$$W = V \cdot p \cdot \Delta x = 0.6 \text{ m}^3 \cdot 1.2 \text{ kg}/\text{m}^3 \cdot 11 \text{ g}/\text{kg}$$

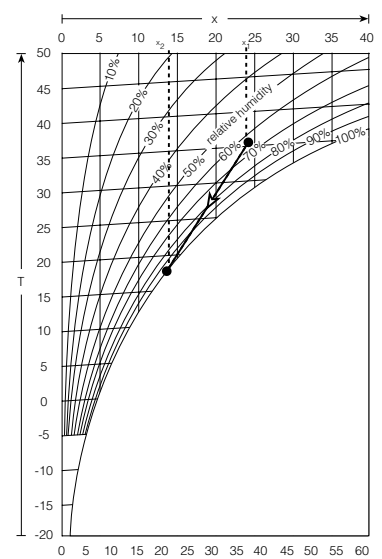
$$W = 7.92 \text{ g} \approx 8 \text{ ml}$$

Poorly sealed cable entries, damaged door gaskets, and unsealed installation of display screens etc. on enclosures can cause air leakage from the enclosure to increase. If air was leaking from an enclosure at a rate of only 3 cfm, condensate would accumulate at the rate of 3 oz/h.

### Conclusion

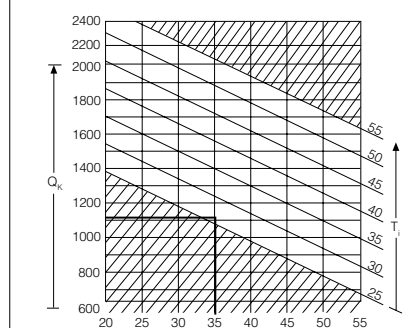
- When the air conditioner is operating the enclosure door should always be closed.
- The enclosure should be sealed on all sides.
- Door switches should be used.
- Air conditioner should meet DIN and EN standards.
- Set temperature only as low as required (Typically  $95^\circ\text{F}$ ).

Mollier h-x diagram to determine the water content of air



$P_d$  = Partial water-vapor pressure (mbar)  
 $T$  = Temperature of air ( $^\circ\text{C}$ )  
 $x$  = Water content (g/kg dry air)

Performance diagram 3279100/3298100 (DIN 3168) (60 Hz)



$T_u$  = Ambient temperature ( $^\circ\text{C}$ )  
 $Q_k$  = Cont. refrigeration capacity (W)  
 $T_i$  = Internal enclosure temperature ( $^\circ\text{C}$ )

### Sizing For The Air Conditioner

The calculations have specified the required cooling capacity  $Q_E = 1063 \text{ W}$  for an ambient temperature  $T_u = +50^\circ\text{C}$  and a required interior enclosure temperature  $T_i = +35^\circ\text{C}$ .

From the available Rittal air conditioners we selected wallmounted model 3298100 with a cooling capacity of 1100 Watt (see performance diagram above).

# Advantages-At-A-Glance

## Air/Air Heat Exchangers

**Reliable and durable** All Rittal heat exchangers are known for their durability and long life radial fans.

**Easy maintenance** They are equipped with filterless operation for quick maintenance with the easily removable cassette.

**Installation** All Rittal heat exchangers have simple and clean installation, and no mounting flange is necessary.

**Special features** Although our heat exchangers are lightweight, they are built with very strong construction.

**Regulatory compliance** Rittal heat exchangers meet global regulatory requirements such as UL, cUL, VDE, CE.

### Practical Hints

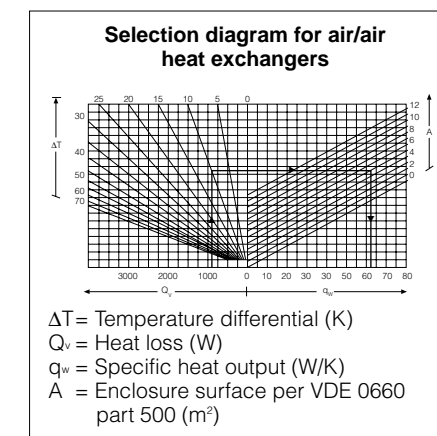
When ambient temperature is considerably lower than the temperature required inside the enclosure, air/air heat exchangers are the climate control component of choice especially if the ambient air contains dust, oil and aggressive chemicals that should not enter the enclosure.

Because of separate interior and exterior air circulation loops, outside air can not enter into the enclosure.

The following should be taken into consideration:

- What ambient temperatures  $T_u$  can be expected?
- What is the required interior temperature  $T_i$  inside the enclosure?
- What is the total heat loss of components inside the enclosure?

- How much heat,  $Q_s$ , is radiated from the inside of the enclosure - through the walls to the environment?
- Is enough space available to install an air/air heat exchanger?



$\Delta T$  = Temperature differential (K)  
 $Q_v$  = Heat loss (W)  
 $q_w$  = Specific heat output (W/K)  
 $A$  = Enclosure surface per VDE 0660 part 500 ( $\text{m}^2$ )

### How To Determine The Sizing For An Air/Air Heat Exchanger, For The Bold Values:

Enclosure dimensions: H = 2000 mm W = 600 mm D = 500 mm	A	<b>4.4</b>	Calculate the effective enclosure surface	A =	<b>4.4</b>
Ambient temperature outside the enclosure in $^\circ\text{C}$	$T_u$	<b>+25</b>	Calculate the temperature differential $\Delta T = T_i - T_u$	$\Delta T =$	<b>+10</b>
Temperature required inside the enclosure in $^\circ\text{C}$	$T_i$	<b>+35</b>			
Heat transfer coefficient of an enclosure: sheet steel ~ 5.5 W/m <sup>2</sup> K plastic ~ 3.5 W/m <sup>2</sup> K	k	5.5	Enter the applicable heat transfer coefficient	k =	5.5
Heat loss in Watts	$Q_v$	<b>900</b>	Enter the heat loss	$Q_v =$	<b>900</b>

### Sizing For An Air/Air Heat Exchanger

When the parameters for enclosure surface A, temperature differential  $\Delta T$ , and heat loss  $Q_E$  have been calculated, the required heat exchanger can be determined.

Air/air heat exchanger model SK 3131000 with a specific thermal capacity of 42 W/C most closely meets the requirements.

Now calculate the required cooling capacity  
 $q_w = \frac{Q_v - (A \cdot \Delta T \cdot k)}{\Delta T}$

Required cooling capacity $q_w =$	W/K	<b>65.8</b>
--------------------------------------	-----	-------------

# Advantages-At-A-Glance

## Air/Water Heat Exchangers

**Reliable and durable** All Rittal heat exchangers are known for their durability and long life radial fans.

**Safety** These air/water heat exchangers are equipped with such safety features as overtemperature alarm contact, solenoid valves, water level sensors, and overflow drainage paths.

**Easy maintenance** They perform well in dirty or oily environments, without the need to clean filters, cassettes, or coils, and require only 1-2 gal/minute of water.

**Special features** While the exchangers offer low energy consumption, they also help maintain low capital cost.

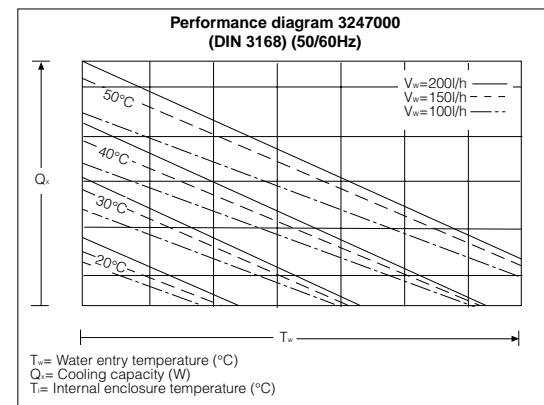
**Regulatory compliance** Rittal heat exchangers meet global regulatory requirements such as UL, cUL, VDE, CE.

### Practical Hints

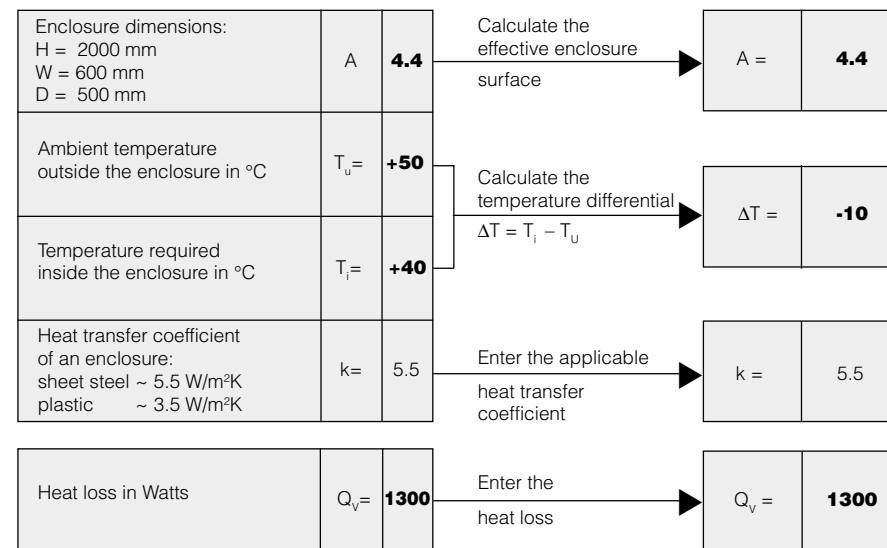
Air/water heat exchangers offer the greatest cooling performance in the smallest available space.

- With a Rittal air/water heat exchanger, the temperature inside the enclosure can be cooled down to below the ambient temperature.
- They can be used in ambient temperatures up to +158°F (+70°C).
- Air/water heat exchangers are extremely practical in dirty environments.

- Water as warm as 70°F can be used.
- Minimum service required because there are no filters to exchange and there is no direct contact with the ambient air.
- They are available in wall and roof mounted versions.



### How To Determine The Sizing For A Wallmounted Air/Water Heat Exchanger, For The Bold Values:



### Sizing For An Air/Water Heat Exchanger

Because we know that the water temperature is + 10°C and that the water flows at a rate of 200 l/h we have specified a model SK 3247000 air/water heat exchanger with a cooling capacity of 1800 Watt which exceeds the required cooling capacity Q<sub>E</sub> = 1542.

Now calculate the required cooling capacity  
 Q<sub>E</sub> = Q<sub>v</sub> - k • A • ΔT

Required cooling capacity Q <sub>E</sub> =	Watt	1542
--	------	------

# Advantages-At-A-Glance

## Filter Fans

**Regulatory compliance** Rittal filter fans meet global regulatory requirements such as UL, cUL, GS, CE.

**Special features** The air throughput in our filter fans has high cfm in a given size.

**Reliability and safety** NEMA 12 is achievable when using filter fans.

**Installation** Rittal's filter fans are easily and quickly mounted with the quick snap-in feature, requiring no screws or tools.

**Aesthetics** All of the filter fans are available with a thin louver profile.

**Broad variety of voltages available** Rittal offers 115V, 230V, 24V dc filter fan models to meet the spectrum of global needs.

**Environmentally friendly technology** Rittal filter fans have a special EMC capability that is available with an off-the-shelf EMI/RFI shielded version.

### Practical Hints

When the ambient air is clean and the ambient temperature is considerably lower than the temperature required inside the enclosure, Rittal filter fans should be used to remove heat from inside the enclosure.

The design of the venting louvers of Rittal filter fans ensures unsurpassed stability of air volume as far as pressure loss is concerned; it also provides perfect contact hazard protection against water.

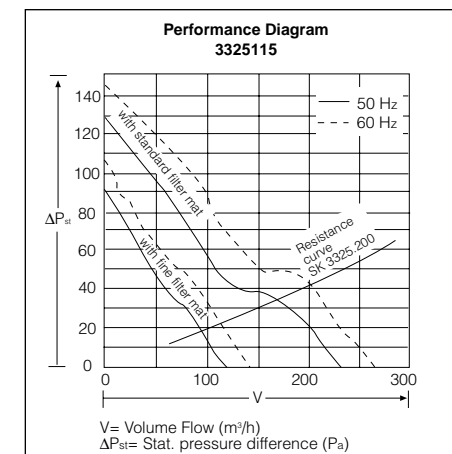
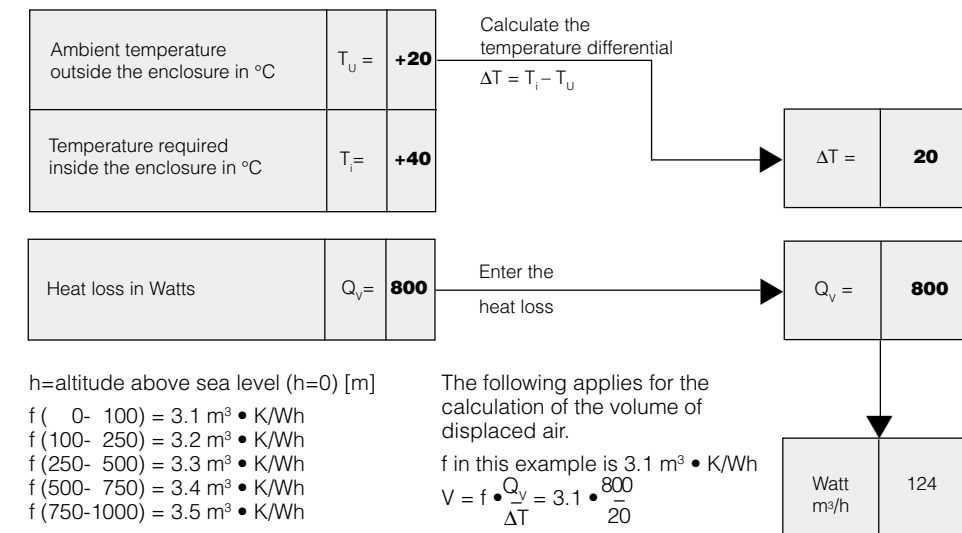
A NEMA 12/13 (IP 54) protection rating can be achieved when a sealing frame and fine filter are used (see accessories).

### Installation tips

The way in which filter fans are installed in an enclosure, depends on the way components are installed in the enclosure.

- Filter fans and exhaust filters should be installed on the enclosure so that the air intake is at the bottom and the exhaust is at the top.
- Air flow within the enclosure is reversible: (suction or blowing).
- Since a fan's filter will become dirty in use, always select a larger fan than indicated in the actual calculation.
- Use a fine filter when there are very small dust particles in the air.
- Install a sealing frame and fine filter when you want to increase the NEMA rating.

### How To Determine The Sizing For A Filter Fan, For The Bold Values:



### Sizing For A Filter Fan And Exhaust Filter

We should select a combination of a filter with an exhaust filter that can deliver an air displacement of at least 124 m³/h.

The performance diagram above will help us select the proper combination of filter fan and exhaust filter.



# Advantages-At-A-Glance

## Panel Heaters

**High performance** Utilizing PTC technology, the panel heaters operate efficiently with even heat distribution.

**Reliability and safety** They have a long life expectancy, while their low surface temperature ensures safe operation.

**Installation** All panel heaters are wired and ready for easy snap-in or screw fastening installation.

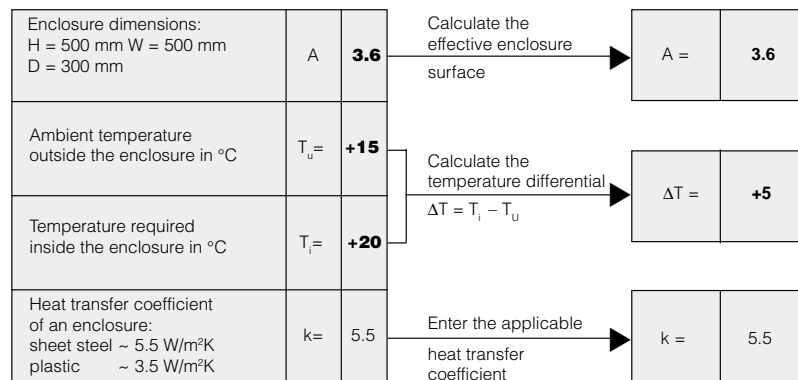
**Special features** Designed to be compact and vibration-free, panel heaters are quite powerful and sturdy.

**Regulatory compliance** Rittal panel heaters meet global regulatory requirements such as UL, VDE, CE.

## Practical Hints

- Maximum efficiency is achieved when enclosure heaters are installed vertically, with the cable entry at the bottom.
- A gap of 2"/50 mm from the top or bottom should be allowed to develop the required convection.
- Heaters should be installed at least .4"/10 mm from steel side walls and at least 1.4"/35 mm from thermo-plastic materials.
- Insofar as possible, heaters should be installed below the components which require protection because hot air rises and will indirectly heat those components.
- In larger enclosures, even heat distribution is best achieved by installing several smaller heaters.
- Heaters can operate without a separate thermostat, but in order to ensure accurate air temperature control within the enclosure, installation of a thermostat is recommended.
- To avoid condensation on installed components, installation of a hygrostat is also recommended.

### How To Determine The Sizing For A Panel Heater, For The Bold Values:

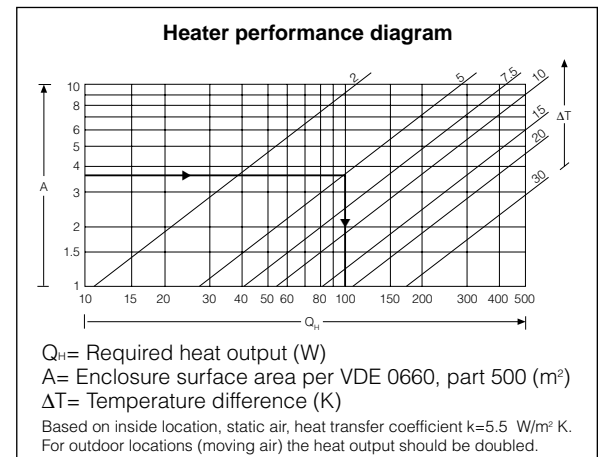


The required heat output can now be calculated with the following formula:

$$Q_H = A \cdot \Delta T \cdot k$$

$$Q_H = 3.6 \cdot 5 \cdot 5.5$$

Watt	99 W
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### Sizing For A Heater

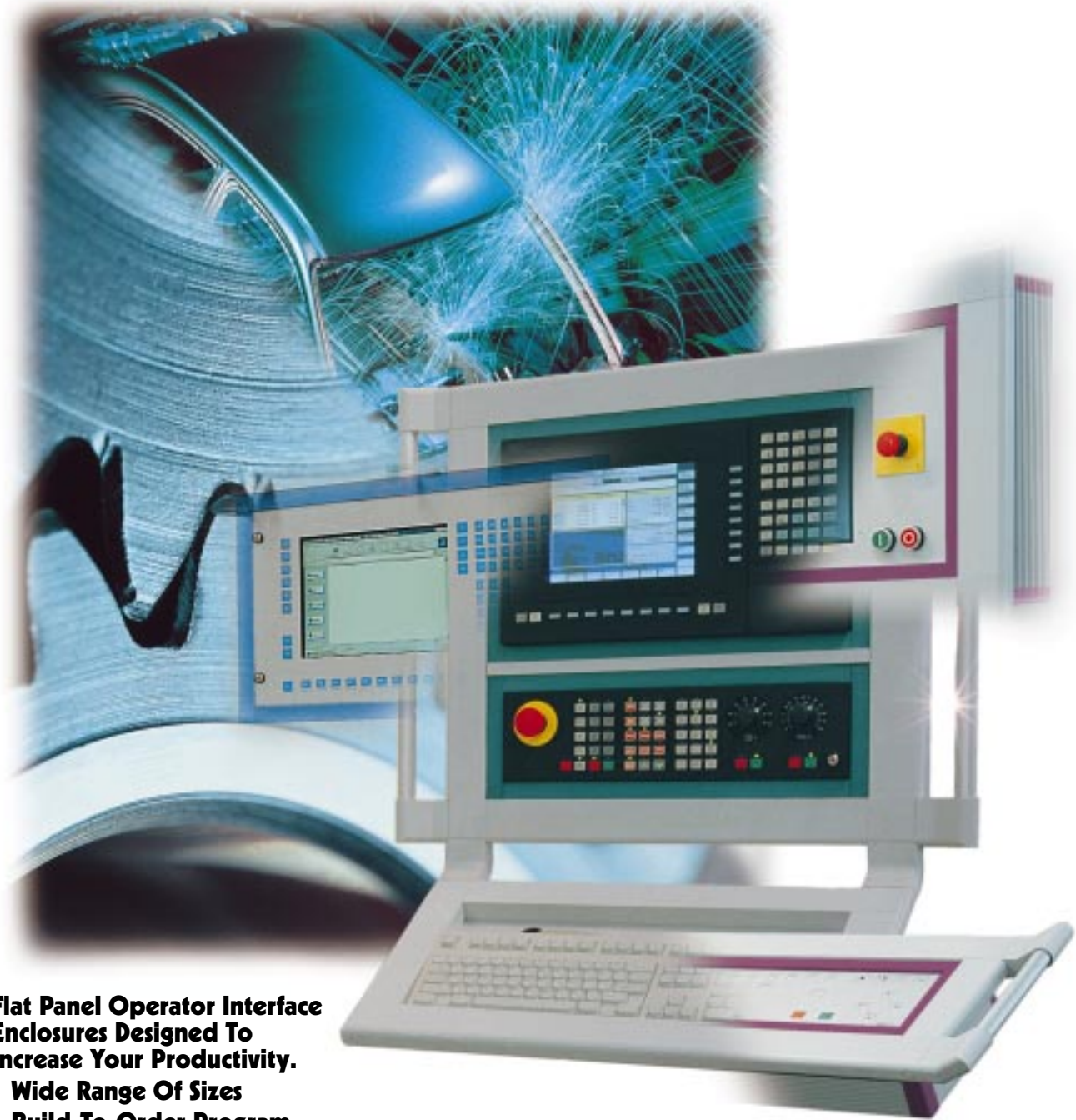
Once the values for the enclosure surface and temperature differential are known, the required heat output can be determined from the heater performance diagram. In this case model 3102000 with a heat output of 61 Watt at 10°C was selected.





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- **Versatile Solutions.**



***Switch to perfection* RITTAL**

# ERGONOMICS ARE KEY BETWEEN OPERATOR AND MACHINE.

**The interface between operator and machine can play a decisive role in your overall productivity.**

That is why Rittal specifically addresses this key area of industrial control. Our goal is to provide protection for programming, operating and monitoring systems. In addition, we aim to create optimum ergonomic conditions for operating personnel that can be adapted to each individual situation.

In addition to the VIP 6000 system, Rittal offers a wide range of enclosure solutions for operator interface applications, which together with support arm systems and a wide range of accessories, provides an unlimited number of customer-specific solutions.



- ▀ **Versatile solutions to suit any technical requirement.**
- ▀ **Three different support arm systems for mobility at the operator level.**
- ▀ **Cost-effective, specific solutions achieved with standard accessories.**
- ▀ **Customer-oriented advice and customer-specific modifications direct from Rittal.**



**A stainless steel support arm system,** together with stainless steel operator enclosures, provides a smart solution for environments that require high standards of corrosion protection and hygiene.



**Universal consoles** in steel or stainless steel, Rittal's one-piece consoles and the AP modular console system have become the standard in the field of machine control.



**PC housings** with mobile pedestals provide an ideal solution for remote applications.



**PC enclosure systems** feature a monitor compartment, various keyboard options, and they offer ample space for CPU and printer.



**The VIP 6000 equipment shelf,** with mouse pad and keyboard bracket, can be adapted to suit any operator with the height-adjustable panel lift.



**19" CP Series operator enclosures** are available in many versions and stand out through their design and versatile, yet simple, component installation.

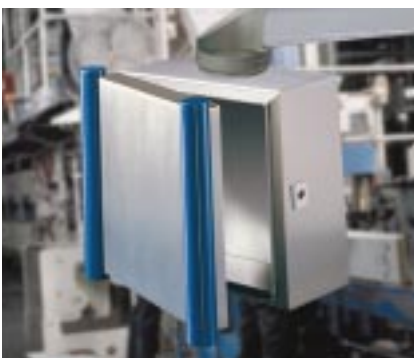


The complete selection of operator interface enclosures and support arm systems can be found in Rittal Handbook 29 under the heading "CP Control Panel Systems."





**VIP 6000 – custom designed to your specifications** – Rittal's Build-to-Order Program allows our customers to pick and choose from numerous options to custom design the perfect solution.



**The stainless steel CP enclosure unit** is based on Rittal's AE enclosure and is ideal for the food and beverage industry.



**CP 6000 with control panel front** is based on Rittal's popular AE enclosure system, combined with an aluminum control panel.



**CP 6500, based on the Rittal AE enclosure.** This new, versatile solution is described in detail on page 50 .

# SMART SOLUTIONS FOR A VARIETY OF APPLICATIONS.

Rittal's operator interface enclosures are designed for a wide variety of applications.

With their unlimited individual versatility, Rittal VIP 6000 operator interface enclosures are produced and assembled to your specifications. Take a close look at the models described on the following pages, and you will see how easy it is to design your own specific solution.



- ▀ Customized assembly for practically any control panel.
- ▀ Cost-effective heat dissipation via cooling fins, air conditioners or filter fans on the enclosure.
- ▀ Fast, flexible component installation with all-round screw channels.
- ▀ Modular versatility with Rittal system accessories.



#### Example 1

- Red trim
- Support arm connection at the bottom for a CP 6500 pendant arm system
- Vertical handles
- Keyboard housing



#### Example 2

- Aluminum front panel with cutout for a touch screen
- The width of the machine control panel in the keyboard housing determines the overall width of the unit
- Support arm connection at the bottom for a CP 6500 pendant arm system
- Horizontal handles on the keyboard housing
- Integrated storage module for hand control housing



#### Example 3

- Without trim
- Support arm connection at the top for a CP 6500 pendant arm system
- Vertical handles
- Deep rear wall to accommodate color monitor



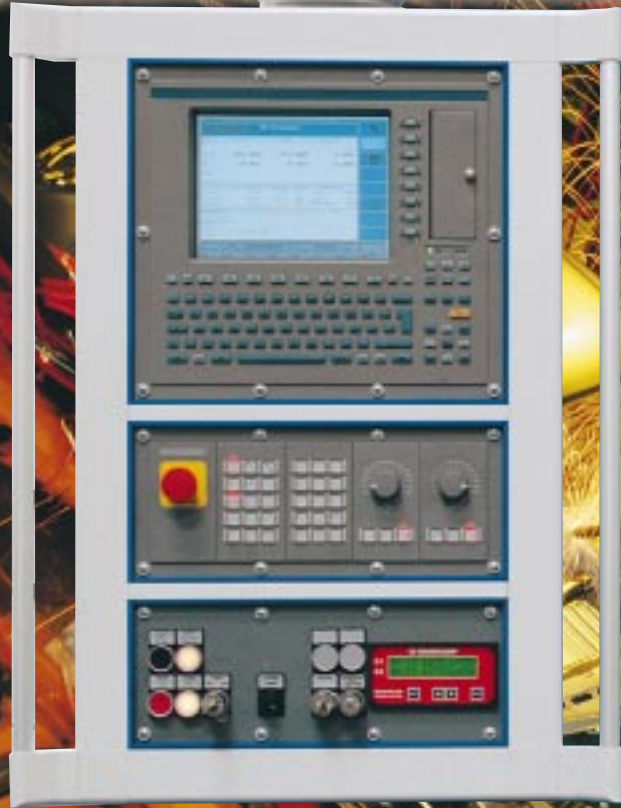
#### Example 4

- Teal trim
- Support arm connection at the top for a CP 6500 support arm system
- Vertical handles with clipboard
- Molding for indicator light
- Keyboard housing with horizontal handles and industrial mouse holder



**Example 5**

- With two cross members
- Pale blue trim
- Support arm connection at the top with adaptor for a CP 6000 pendant arm system
- Vertical handles



**Example 8**

- With one cross member
- Teal trim
- Support arm connection at the bottom for a CP 6500 pendant arm system
- With mobile pedestal
- With keyboard housing and horizontal handles



**Example 6**

- Aluminum front panel with installation cutout for touch screens
- Teal trim
- Support arm connection at the bottom for a CP 6500 pendant arm system
- Vertical handles



**Example 7**

- Aluminum front panel, finished to order
- Teal trim
- Support arm connection at the bottom with adaptor for a CP 6000 support arm system
- Vertical handles
- Keyboard housing with ergonomically designed mouse box

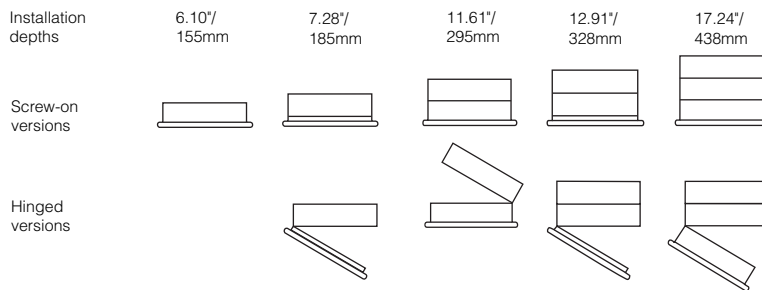
# UNLIMITED VIP 6000 OPERATOR INTERFACE POSSIBILITIES.

**Achieve versatile solutions with the VIP 6000 operator enclosures, available in a wide range of sizes and depths.**

The VIP 6000 is offered in five depths and screw-on or hinged versions. In addition, Rittal's standard VIP 6000 package provides for customer-specific configurations and custom assembly of accessories, such as aluminum front panels, handles, cross members and trim.



- ▣ **Five enclosure depths to accommodate virtually all types of control components.**
- ▣ **Hinged enclosure version for optimum access during assembly and maintenance work.**
- ▣ **Rigid and adjustable frame couplings between the operator panel and the keyboard housing satisfy any ergonomic requirement.**
- ▣ **Can be combined with the CP 6000 and CP 6500 support arm systems. Support arm connection can be at the top, bottom or top and bottom.**



## Example 9

- With one sealing bar
- Teal trim
- Support arm connection at the bottom for a CP 6500 pendant arm system
- Vertical handles with clipboard
- Keyboard housing with horizontal handles



## Example 10

- AE control panel with VIP 6000 frame
- Aluminium front panel, built-to-order, with built-in keyboard drawer
- Interface box fitted at the side and micro air conditioner fitted in the rear door
- Support arm connection at the bottom for a CP 6000 pendant arm system



## Example 11

- Control panel and keyboard housing with adaptor plate for panel installation between pale blue trim
- Support arm connection at the bottom for a CP 6500 pendant arm system
- Vertical and horizontal handles



## Example 12

- Vertical sealing bar in the control panel/ keyboard housing
- Horizontal and vertical teal trim
- Support arm connection at the top with adaptor for a CP 6000 pendant arm system
- Control panel with vertical handles and clipboard
- Keyboard housing with horizontal handle



**Example 13**

- Teal trim
- Support arm connection at the bottom with a CP 6500 system
- With cooling fins



**Example 16**

- Purple trim
- Support arm connection at the bottom for a CP 6500 pendant arm system
- Pedestal platform
- Keyboard housing with vertical handles and storage for hand control housing



**Example 14**

- Blue trim
- Support arm connection at the bottom for a CP 6500 pendant arm system
- VIP air conditioner installed
- 155mm deep



**Example 15**

- Teal trim
- Support arm connection at the top for a CP 6500 pendant arm system
- Vertical handles
- Keyboard housing with horizontal handle

## VIP — The Right Frame.

Rittal's VIP 6000 operator interface system offers modular solutions for countless flat panel applications. Its contemporary design showcases control technology in an attractive package that provides:

- Optimum ergonomics for the operator
- Protection for heat-sensitive electronic components
- Special installation kits for easy mounting of practically any type of control equipment
- A variety of sizes and versions that can be adapted to your requirements.

The VIP 6000 system has the following approvals:

- UL
- TÜV
- Lloyd's Register of Shipping
- VDE



**German Patent No. 195 25 876**  
**German Patent No. 195 25 880**  
**German Patent No. P 41 09 695**  
**European Patent No. 0 505 681**  
**with validity for CH, DE, FR, GB, IT**  
**German Registered Design**  
**No. M 94 08 533**  
**Austrian Registered Design No. 17467**



Panel mounting screws are infinitely adjustable.



Plastic trim strips cover unsightly screw heads.



The system also accommodates panels with studs.

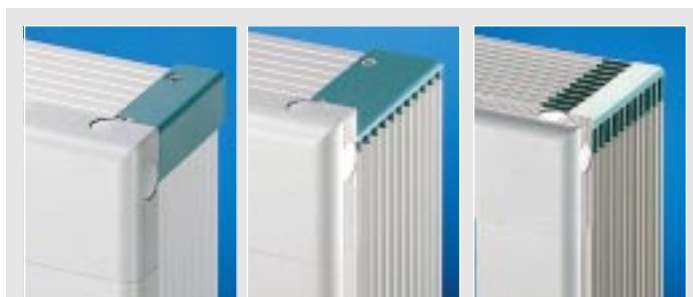
## Every Installation Point Is Easy To Reach, From All Sides!

Ideally, the operator panel is screwed onto the enclosure from outside so that the entire unit can be easily mounted from the front.

Clip-in clamps with cage nuts provide fastening points around the perimeter that are infinitely adjustable (edge to center) from .28" to .51"/7 to 13mm, while screw heads are neatly covered by a trim strip.

Panels with studs (minimum .80"/20mm long) can also be installed.

There is no need for a special mounting frame, ever!

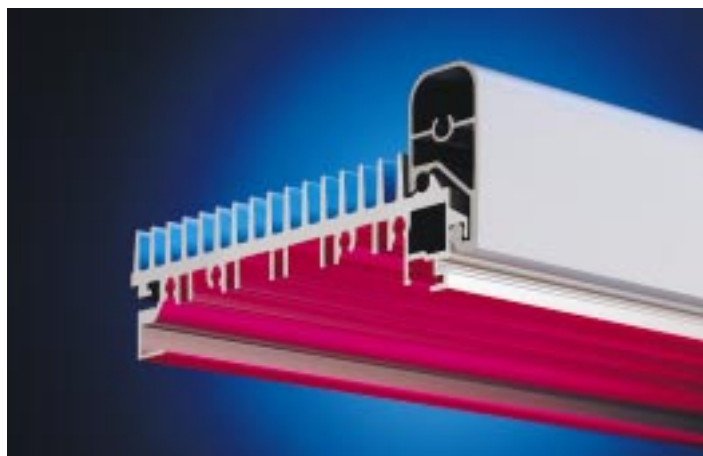


### Example: Heat loss\* dissipating capacity for an enclosure with a 19" x 7U (H x W) front panel

- |                                  |  |                                     |
|----------------------------------|--|-------------------------------------|
| 1. VIP 6000 without fins: 30.6 W | 2. VIP 6000 fins on left and right sides: 50.2 W | 3. VIP 6000 fins all around: 69.4 W |
|----------------------------------|--|-------------------------------------|

\* Pv (W) for DT = 20 K (calculation based on: DIN VDE 0660, part 507)

## Heat Dissipation – Without Expensive Climate Control Components!



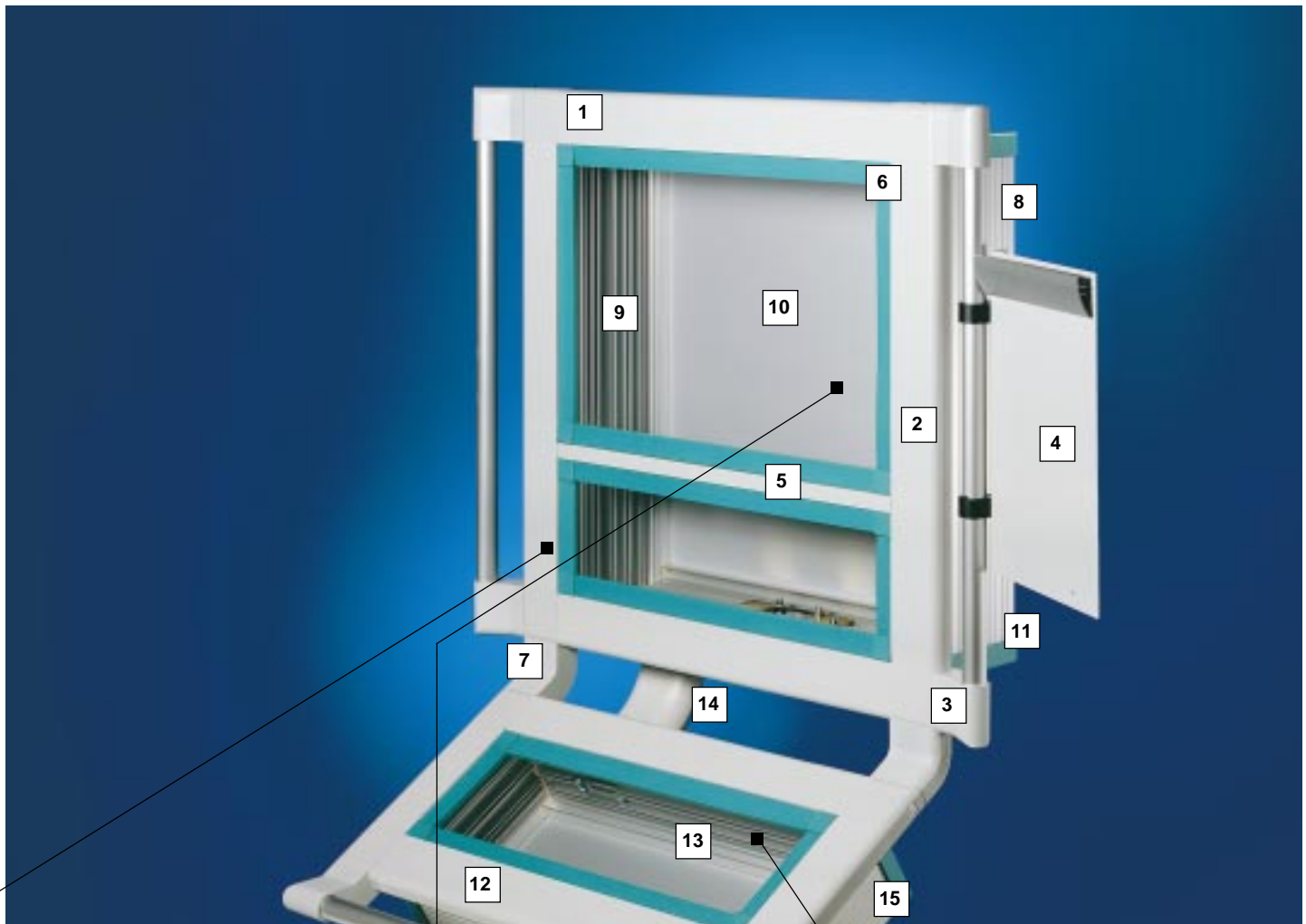
A standard VIP 6000 already has a very good heat removal coefficient. Adding cooling fins can more than double heat dissipation! This is accomplished not only through the fins, but also through mounting channels that act as internal cooling

fans to provide optimum heat absorption and dissipation.

For many applications this feature means extra cost and energy savings because there is no need to install expensive climate control components.



# VIP 6000 OPERATOR INTERFACE SYSTEM



## VIP 6000 Frame Profile

- 1 Built-to-order**  
The frame is custom made to fit the panel.
- 2 Easy to maneuver**  
with or without handles.
- 3 Optional handle grips**  
let you customize your design.
- 4 Optional clip board**  
displays manuals and drawings at eye level.
- 5 Optional cross members**  
partition front of enclosure and allow installation of various control components.
- 6 Colored trim strips**  
– five different colors, in three styles.
- 7 Frame coupling**  
– rigid or adjustable – allows installation of keyboard housings and trays.

## VIP 6000 Operator Housing

- 8 Optimum heat dissipation**  
Three versions: without fins, cooling fins on sides only, or cooling fins all around. The version with cooling fins on all sides dissipates twice as much heat as the version without fins. Also available is a 920BTU air conditioner for aggressive cooling requirements.
- 9 Mounting channels**  
around the sides are threaded to allow flexible component installation. They also promote heat absorption and dissipation.
- 10 Rear walls**  
are screwed on or can be hinged. Extra deep rear walls are available for easy installation of deep components.
- 11 Corner protection**  
is impact resistant and matches color of trim.

## VIP 6000 Keyboard Housing

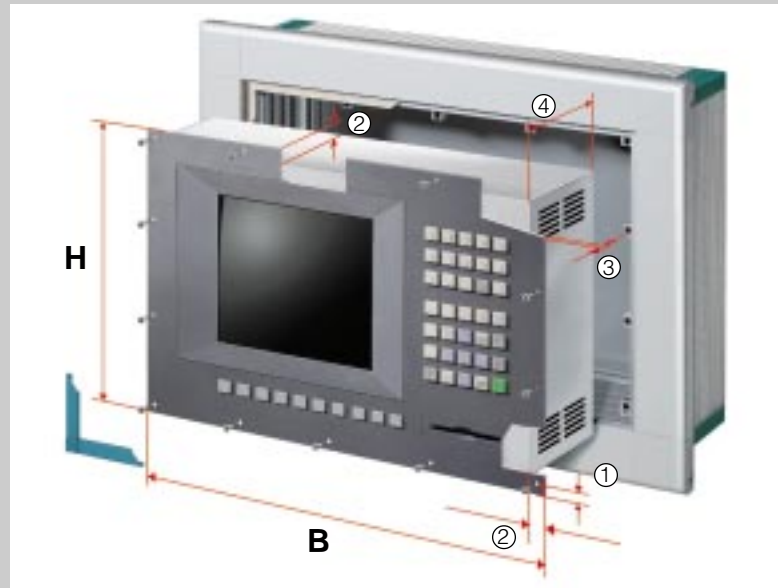
- 12 Keyboard housing**  
is deep enough to accept large components. Other versions include a keyboard housing for standard keyboards and a flat housing for key pads.
- 13 Mounting channels**  
on the inside walls are threaded for flexible component installation.
- 14 Cabling protection**  
through flexible or rigid cable ducts with a diameter large enough to route cables (even with plugs) from the housing to the keyboard.
- 15 Corner protection**  
is impact resistant and matches color of trim.

# 1. VIP 6000 PANEL DESIGN

## All Components Fit. . .

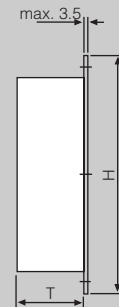
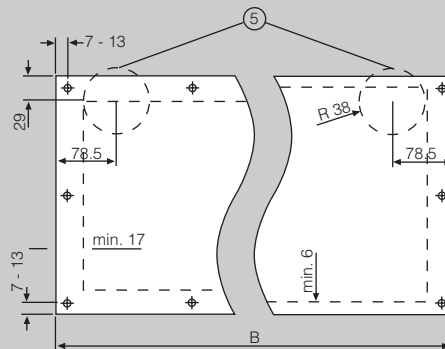
. . . in the operator or keyboard housing when they meet the following criteria:

- ① Mounting bolts are at least 0.79"/20mm long and are spaced between 0.28" to 0.51"/7 to 13mm (edge to center).
- ② Front panel clearance on sides with installation holes 0.67"/17mm, on sides without installation holes 0.24"/6mm.
- ③ Front panel thickness variable depending on type of trim strip.
- ④ Installation depths:
  - standard operator enclosures: 6.10", 7.28", 11.61", 12.91", 17.24" (155, 185, 295, 328, 438mm)
  - operator enclosures with 1.77" (45mm) deep rear wall\*: 7.87", 9.06", 13.39", 14.69", 19.02" (200, 230, 340, 373, 483mm)
  - operator enclosures with 9.65" (245mm) deep rear wall\*: 15.75", 16.93", 21.26", 22.56", 26.89" (400, 430, 540, 573, 683mm)
- ⑤ When a hinged rear door is used, the maximum installation depth in the area of the cam latch is reduced by 1.1"/27mm.



The above applies to most standard control panels and keyboards. When they do not fit, a special solution such as a deeper rear wall or an additional installation frame can be used.

\* Other depths are available on special request.



B= Width  
T= Depth

## Any Size — Built To Your Specifications!

Let Rittal know the dimensions of your control panels and the accessories you require, and we will fabricate an operator enclosure to your exact specifications.

The following pages demonstrate how to determine your installation criteria or, ask your Rittal representative for our special VIP 6000 order form to make it even easier.

Modular accessories such as aluminum front panels, handles, and cross members are also made to your exact specifications.



Rittal's VIP 6000 system accommodates virtually any mounting format.

# VIP 6000 OPERATOR INTERFACE SYSTEM



## Specifications:

Page 10 – 17

## More accessories

Page 22 – 34

### Material:

*Housing and front frame:*  
extruded aluminum

*Frame corner pieces:*  
die-cast zinc

*Corner protection pieces:*  
self-extinguishing plastic

*Trim strips:*  
flexible plastic

### Finish:

*Housing frame:*  
natural anodized

*Front frame and frame corner pieces:*  
textured enamel, light grey (RAL 7035)

*Plastic parts:*  
color per customer specification, see page 10

### Ratings:

NEMA 12  
IP 65



**Pedestal/platform**  
provides ideal base for remote applications.  
Part No. see page 26.



**CP 6500 support arm system**  
for ideal ergonomics and design.  
Part No. see pages 41 – 43.



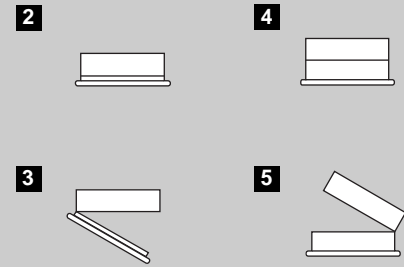
**Interface box**  
can be mounted in your VIP 6000.  
Part No. see page 33.

# 2. VIP 6000 OPERATOR ENCLOSURE

## 2.1 Operator Enclosure

Installation depth:

- 1** 6.10"/155mm
- 2** 7.28"/185mm – screw-on
- 3** 7.28"/185mm – hinged
- 4** 11.61"/295mm – screw-on
- 5** 11.61"/295mm – hinged
- 6** 12.91"/328mm – screw-on
- 7** 12.91"/328mm – hinged
- 8** 17.24"/438mm – screw-on
- 9** 17.24"/438mm – hinged



## 2.2 Cross Member/Sealing Bar

- 0** Without cross member or sealing bar
- 1** With one cross member
- 2** With one sealing bar
- 3** With two cross members
- 4** With two sealing bars
- 5** With one cross member and one sealing bar



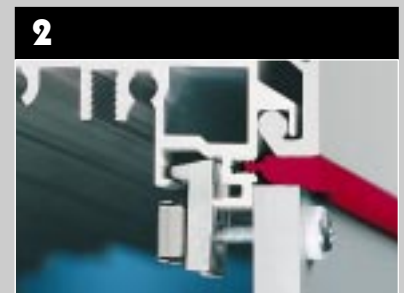
## 2.3 Cooling Fins

- 1** No fins
- 2** Fins on sides only
- 3** Fins all around
- 4** For aggressive cooling requirements - please reference the "Special Modifications" section on the Rittal VIP Order Form insert.



## 2.4 Types Of Trim Strips

- 1** Cover trim
- 2** End trim
- 3** Spacer trim



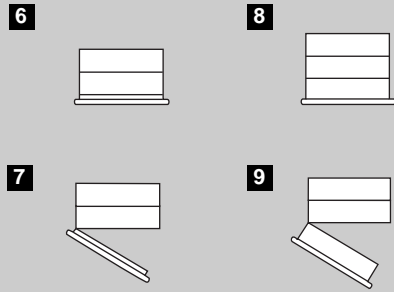
## 2.5 Trim Colors

- 1** Teal (similar to RAL 5018)
- 2** Light blue (similar to RAL 5012)
- 3** Bright red (similar to RAL 3001)
- 4** Purple (similar to RAL 4006)
- 5** Dark grey (similar to RAL 7030)





# DESIGN



View from the top.  
Other hinges available, if required.

Detailed dimensions Pages 18/19



Detailed dimensions Pages 20/21

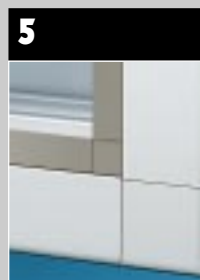


Detailed dimensions Pages 18/19

For units with installation depths of 7.28" and 12.91"/185 and 328mm, the housing part that is attached to the front frame (approximately 35mm) is available without fins only.

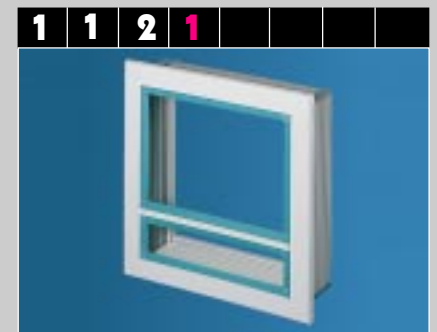


Detailed dimensions Pages 20/21



## Example

The colored numbers identify the version we've selected for our example.

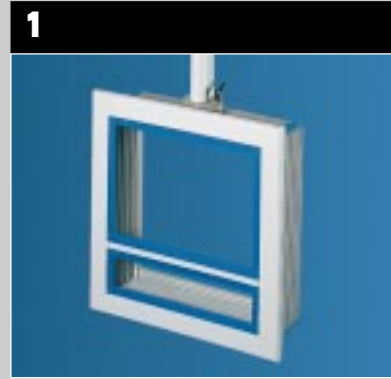
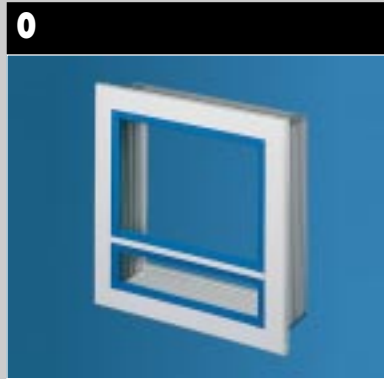


## 2.6 Support Arm Connection

- 0** Without connection
- 1** Connection at top
- 2** Connection at bottom
- 3** Connection at top and at bottom, (Includes one cover panel)

Two different support arm systems are available (see pages 37 – 43):

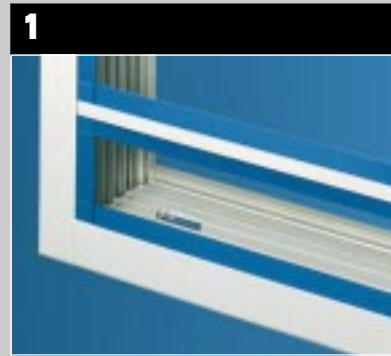
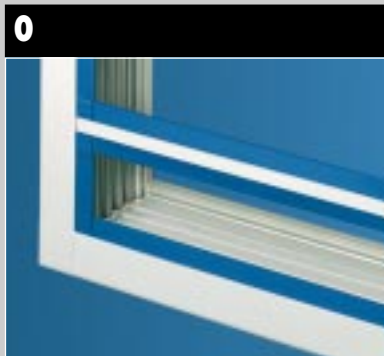
- CP 6500 is designed for enclosures with installation depths of 6.10", 7.28", and 11.61"/155, 185, and 295mm.
- CP 6000 is designed for enclosures with installation depths 12.91" and 17.24"/328 and 438mm.



## 2.7 Cable Duct Connection

- 0** Without cable duct connection
- 1** With cable duct connection

This opening allows routing of keyboard cable or connecting the operator enclosure to the keyboard housing via a rigid or flexible cable duct (see pages 16, 22 or "Technical Details" pages 18/19).



## 2.8 Rear Wall

- 1** Screw-on, natural anodized aluminum.
- 2** Hinged, on longest side, natural anodized aluminum; lock with double bit insert (similar to SZ 2520.000 – see Rittal Handbook 29, page 702).
- 3** Expansion back plus 1.77"/45mm\* sheet steel, light grey (RAL 7035), hinged, integral screw lock.
- 4** Expansion back plus 9.64"/ 245mm\* aluminum, light grey (RAL 7035), screw-on.

\*Other depths and designs on request. Review the "Special Modifications" section on the VIP 6000 Order Form insert.



As you can see, enclosure specifications for the VIP can be determined quickly and easily. Similarly, you can determine your keyboard housing and specifications.

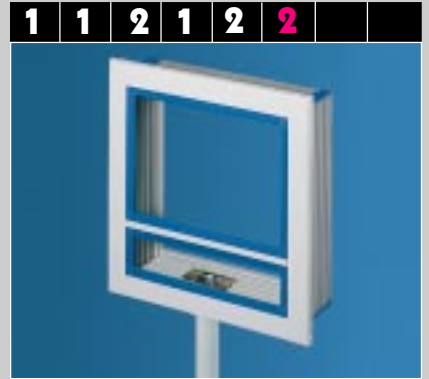
- Dimensions for the components you select can be found on pages 18-21.
- Accessories such as handles, keyboard drawers, clip boards and interface boxes are available to complete your design (pages 22-34).

## Example

The sequence of illustrations on the far right side shows you how our operator enclosure is built up.

The large illustration shows the complete solution with all relevant numbers. The table below details the individual specification numbers of our example:

Specification number	Design of operator enclosure
<b>1</b>	1 operator enclosure (installation depth 6.10"/155mm)
<b>1</b>	1 cross member
<b>2</b>	fins on sides only
<b>1</b>	cover trim
<b>2</b>	trim color: light blue (similar to RAL 5012)
<b>2</b>	support arm connection at bottom
<b>1</b>	with cable duct connection
<b>2</b>	rear wall, hinged, with double bit insert



**Part No.: CP 6392.009**  
**Specification Numbers**  
**For Operator Enclosure**

**1 1 2 1 2 2 1 2**

# 3. VIP 6000 KEYBOARD HOUSING DE

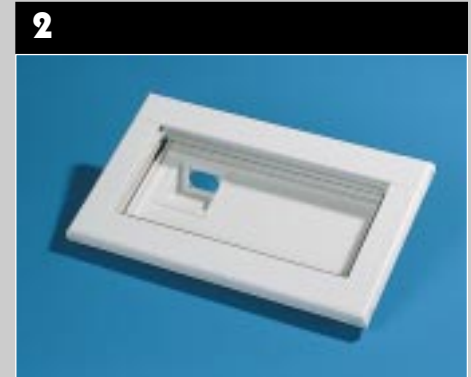
## 3.1 Keyboard Enclosure

- 1** Installation depth: 4.13"/105mm
- 2** Installation depth: 1.73"/44mm
- 3** Keyboard lay-in tray, depth: 1.06"/27mm
- 4** Keyboard lay-in tray, depth 1.06"/27mm, with flexible cable tube connector

For standard keyboards. Without trim.

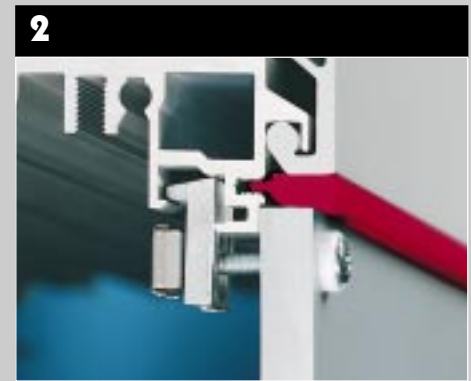
All keyboard housings are custom made per your component dimensions and depending on your operator enclosure specifications – see page 8.

**Note:** The width of the keyboard housing/ tray must correspond with the width of the operator enclosure.



## 3.2 Types Of Trim Strips\*

- 1** **Cover trim**  
covers installation screws of front panel – for front panels ≤ .14"/3.5mm thick.
- 2** **End trim**  
covers gap between front panel and frame profile – for all front panel thicknesses.
- 3** **Spacer trim**  
For components that must be flush with frame profile.  
For front panels with a thickness of appr. 0.14"/3.5mm.



\* No selection is available for keyboard enclosure **3** and **4**. Please indicate with an X in this case.

## 3.3 Trim Colors\*

- 1** Teal (similar to RAL 5018)
- 2** Light blue (similar to RAL 5012)
- 3** Red (similar to RAL 3001)
- 4** Purple (similar to RAL 4006)
- 5** Dark grey (similar to RAL 7030)

Enclosure corner protection pieces will also be supplied in the specified color.  
Other colors are available on special request.



\* No selection is available for keyboard enclosure **3** and **4**. Please indicate with an X in this case.



# DESIGN

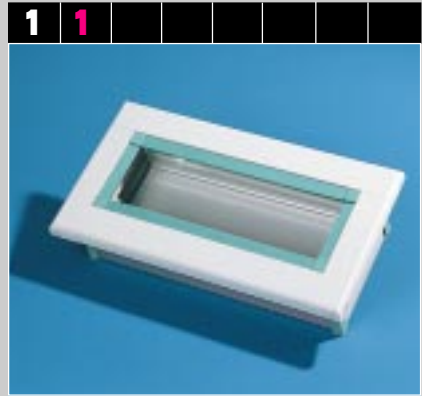


Detailed dimensions Page 20/21



## Example

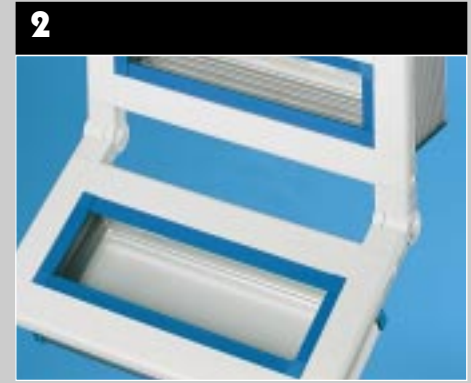
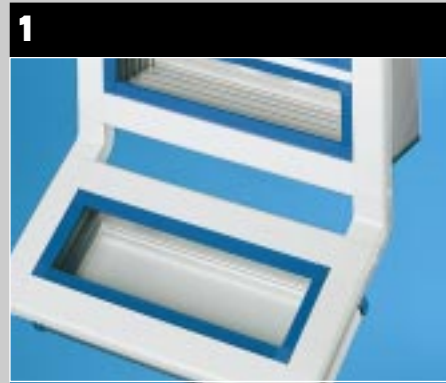
The colored numbers identify the version we've selected for our example.



### 3.4 Frame Connector

- 1** Rigid, 120° angle
- 2** Adjustable from 75° to 210°, adjustable in 7.5° increments.

Allows optimum ergonomic adjustment for each user.



### 3.5 Cable Duct\*

- 1** Rigid, light grey (RAL 7035) aluminum – for use with rigid frame coupling between operator enclosure and keyboard housing.

**Installation depth: 4.13"/105mm**

- 2** Flexible, light grey (RAL 7035) plastic – for use with rigid and flexible frame coupling between operator enclosure and keyboard housing.

**Installation depth: 4.13"/105mm, 1.73"/44mm or 1.06"/27mm**

\*No selection is available for keyboard enclosure **3**.

Please indicate with an X in this case.

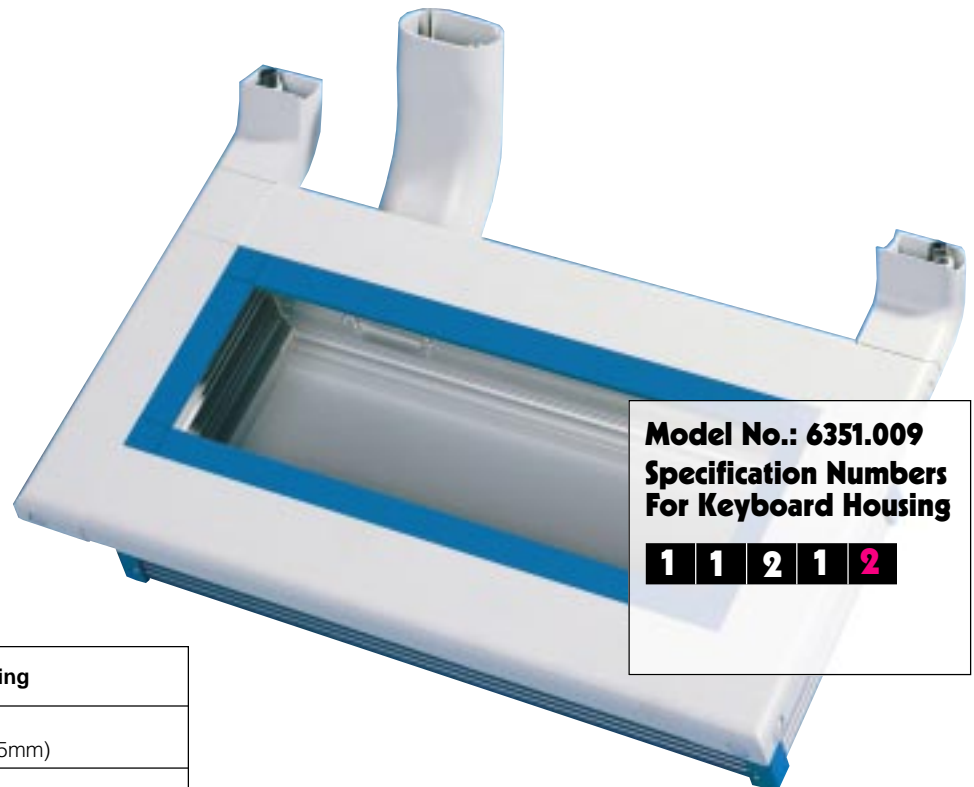


### Example

The sequence of illustrations on the far right side shows you how our keyboard housing is built up. The large illustration shows the complete solution with all relevant numbers.

The table below details the individual specification numbers of our example:

Specification number	Design of keyboard housing
<b>1</b>	keyboard housing (installation depth 4.13"/105mm)
<b>1</b>	cover trim
<b>2</b>	trim color: light blue (similar to RAL 5012)
<b>1</b>	frame connector, rigid
<b>1</b>	cable duct, rigid



**Model No.: 6351.009**  
**Specification Numbers For Keyboard Housing**

**1 1 2 1 2**

Just as with the operator enclosure, only a few steps are necessary to specify the dimensions and accessories for your keyboard housing.

Detailed dimensions Page 20/21

### Example

The colored numbers identify the version we've selected for our example.



Detailed dimensions Page 20/21



**Model No.: 6392.009**  
**Specification Numbers**  
**For Operator Enclosure**

**1 1 2 1 2 2 1 2**

**Model No.: 6351.009**  
**Specification Numbers**  
**For Keyboard Housing**

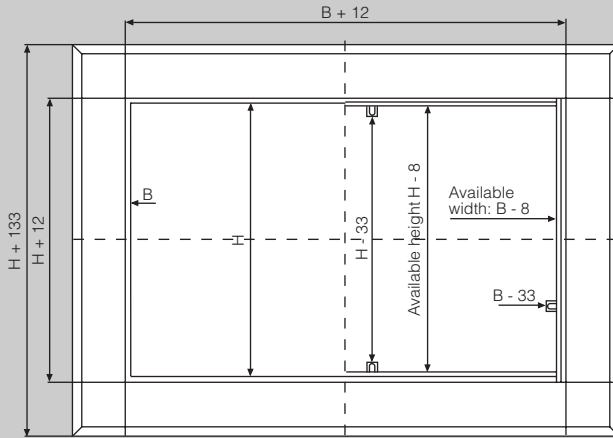
**1 1 2 1 1**

You can easily specify your complete VIP 6000 operator interface system just as we have demonstrated in our example.

- Detailed dimensions for the components selected can be found on pages 18-21.
- Accessories such as handles, keyboard drawers, clip boards and mounting angles can be found on pages 22-34.

# Technical Details

## Operator enclosure



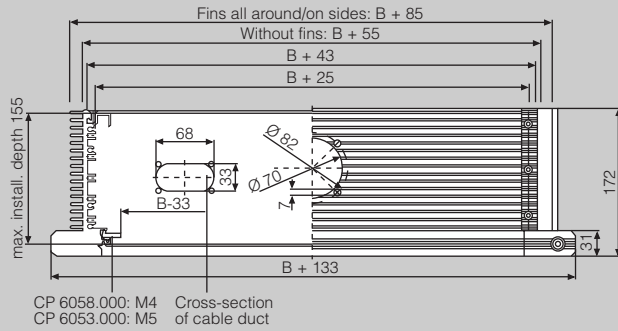
Height dimensions:

- H = height of front panel
- H-8 = available space between enclosure profiles
- H+133 = overall height
- H-33 = available space between brackets
- H+12 = available space between front frame posts

Width dimensions:

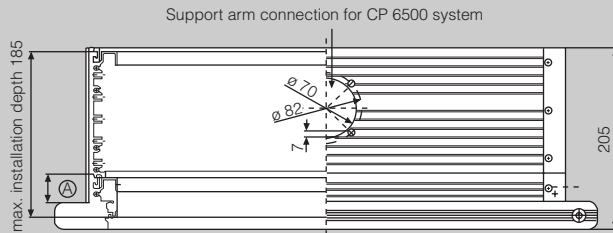
- B = width of front panel
- B-8 = available space between enclosure profiles
- B+133 = overall width
- B-33 = available space between brackets
- B+12 = available space between front frame posts

### 1 Max. installation depth 6.10"/155mm



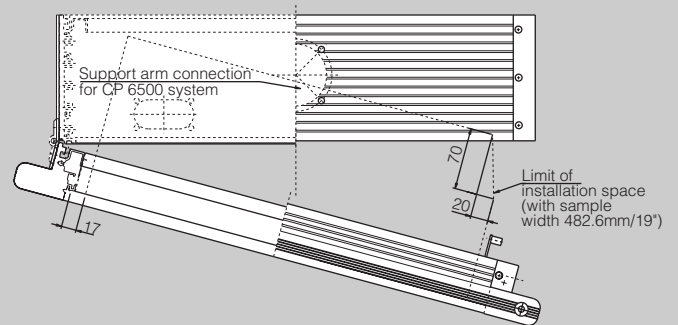
### 2 Max. installation depth 7.28"/185mm

#### Screw-on



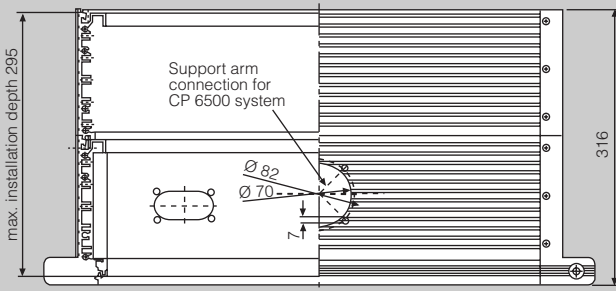
A= Mounting section without fins only in this area

### 3 Hinged

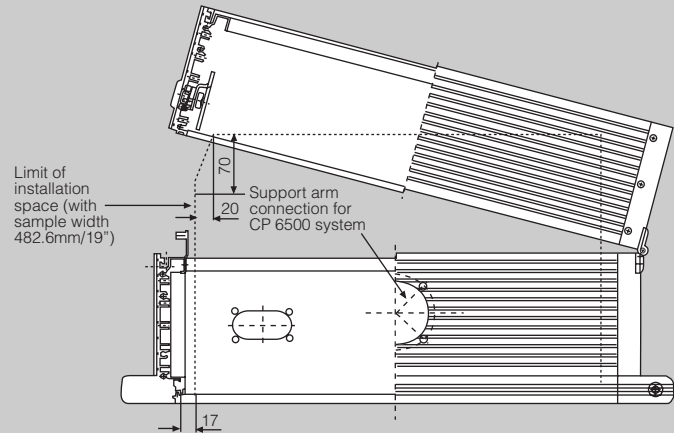




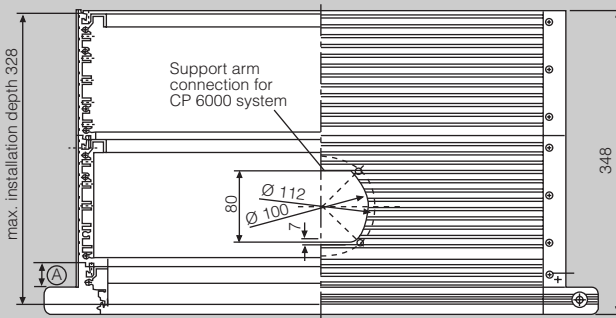
**4 Max. installation depth 11.61"/295mm**  
Screw-on



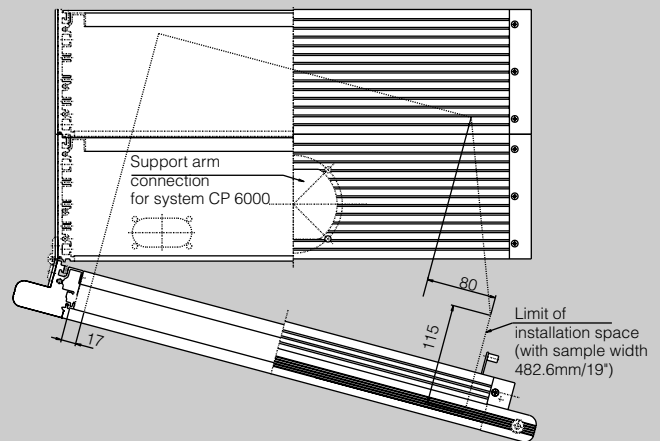
**5 Hinged**



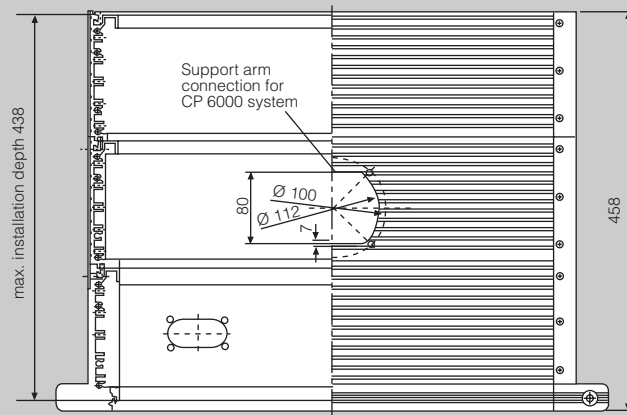
**6 Max. installation depth 12.91"/328mm**  
Screw-on



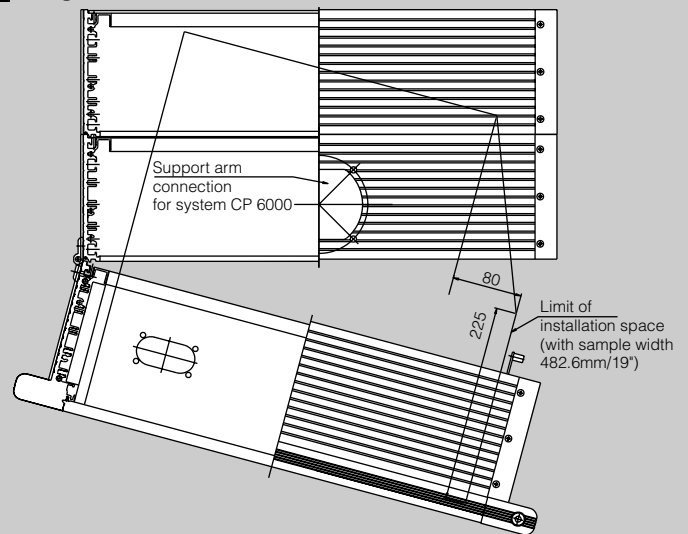
**7 Hinged**



**8 Max. installation depth 17.24"/438mm**  
Screw-on



**9 Hinged**

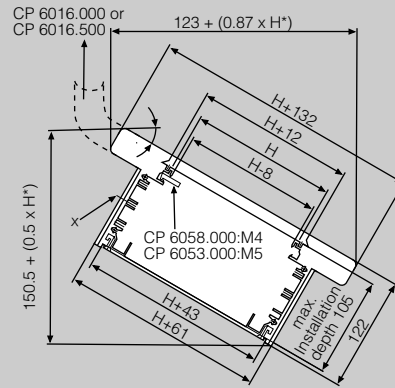
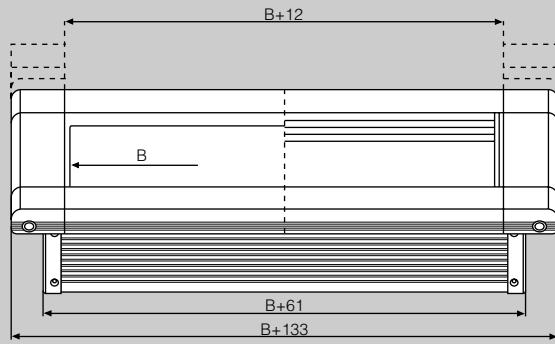


A= Mounting section  
without fins only in this area

# Technical Details

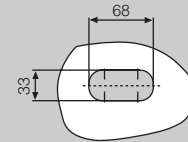
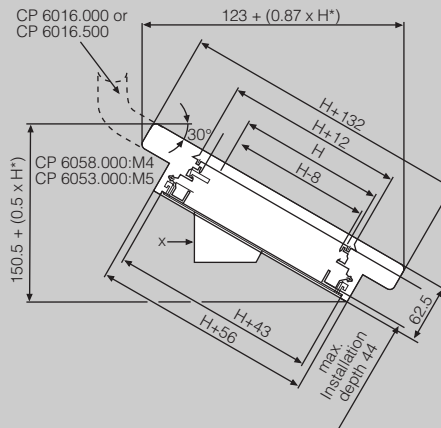
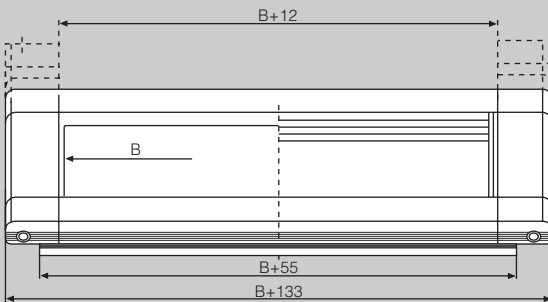
## 1 Keyboard housing: 4.13"/105mm inst. depth

H = Height of front panel  
 B = Width of front panel  
 \* valid for 30° angle to horizontal



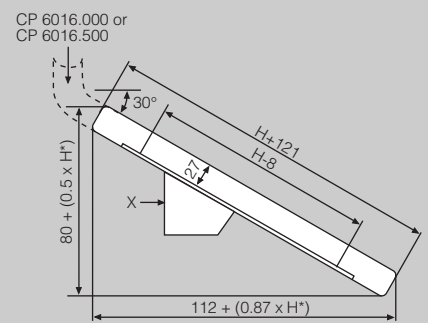
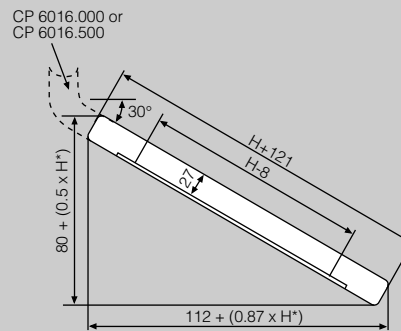
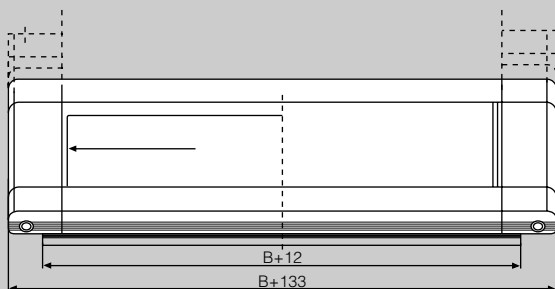
## 2 Keyboard housing: 1.73"/44mm inst. depth

X = Cross-section of cable duct



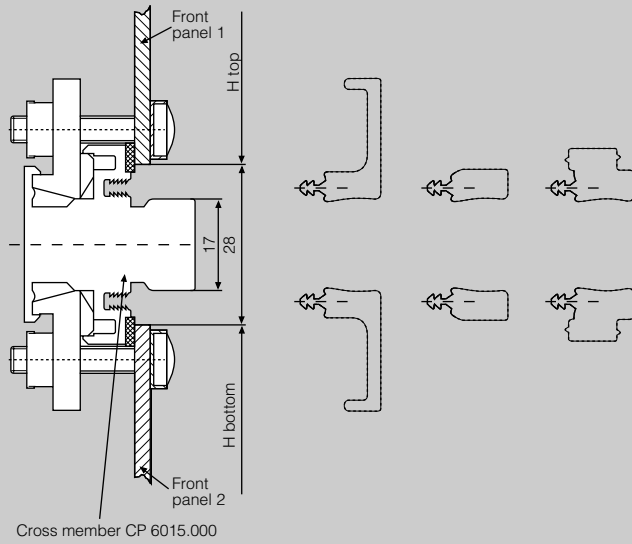
## 3 Keyboard housing: 1.06"/27mm deep

## 4

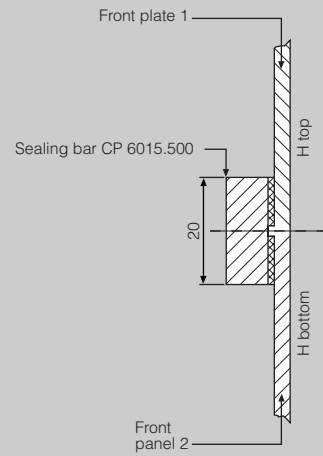


H = Height of keyboard retaining frame  
 B = Width of keyboard retaining frame  
 \* valid for 30° angle to horizontal

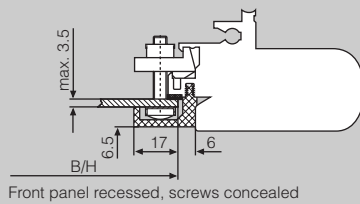
### Cross member



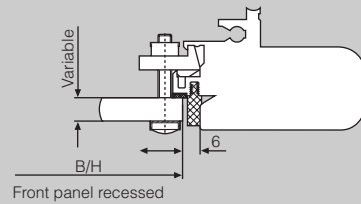
### Sealing bar



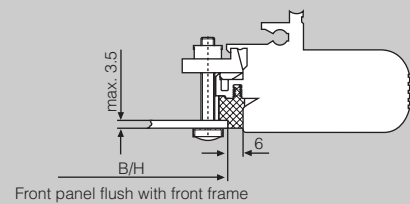
### Cover trim strip



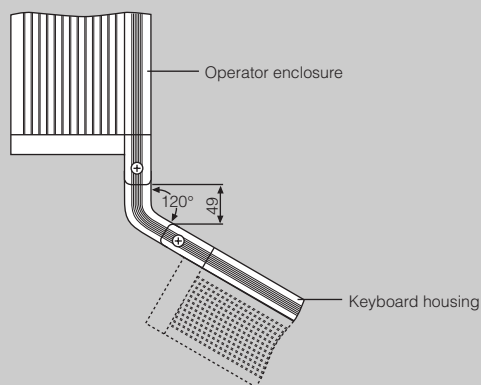
### End trim strip



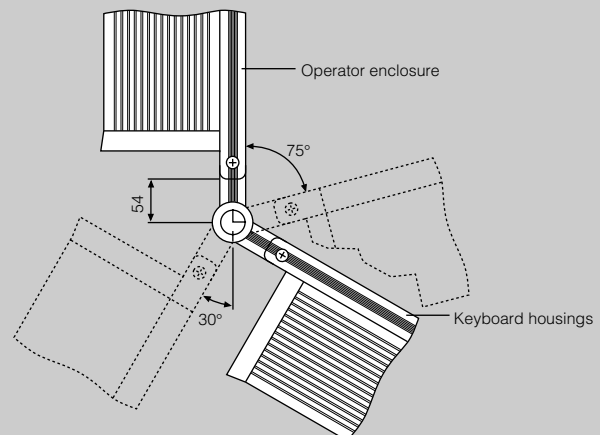
### Spacer trim strip



### Frame coupling, rigid



### Frame coupling, adjustable



# VIP 6000 Accessories



## Adjustable Frame Coupling

allows optimum ergonomic adjustment for each user; adjustable from 75° to 210° in 7.5° increments for accurate adjustment and secure locking.

(Also for AE with VIP frame)

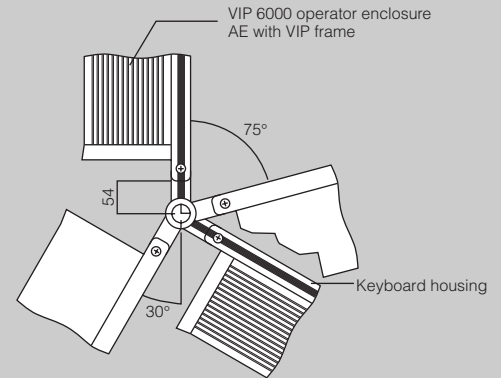
Especially suitable in conjunction with the CP 6527.000 10° tilting adaptor and the CP 6529.000 tilting adaptor (see page 43).

**Material:** die-cast zinc

**Color:**  
light grey (RAL 7035)

**Configuration:**  
2 frame couplings, installation hardware

Packs of	Part No. CP
1 set	<b>6016.000</b>



## Flexible Cable Duct

protects cables when CP 6016.000 adjustable frame coupling is used. Can also be used to replace standard rigid cable duct. Also required for 1.73"/44mm deep keyboard housings.

**Material:**  
plastic

**Color:**  
light grey (RAL 7035)

**Configuration:**  
cable duct, installation hardware

Packs of	Part No. CP
1	<b>6017.000</b>



## Flexible Cable Duct

is a longer version of the CP 6017.000 cable duct for VIP 6000 operator housings with an installation depth of 7.28"/185mm

(Version **2** and **3**) and 12.91"/328mm

(Version **6** and **7**).

Is included in configuration of keyboard housing.

**Material:**  
plastic

**Color:**  
light grey (RAL 7035)

**Configuration:**  
cable duct, installation hardware

Packs of	Part No. CP
1	<b>6017.100</b>



## Rigid Frame Coupling

alternative to adjustable frame coupling, allows rigid, 120° connection of keyboard housings (see page 16).

(Also for AE with VIP frame)

**Material:**  
die-cast zinc

**Color:**  
light grey (RAL 7035)

**Configuration:**  
2 frame couplings,  
installation hardware

Packs of	Part No. CP
1 set	<b>6016.500</b>





### Rigid Cable Duct

provides cable protection between operator enclosure and 4.13"/105mm deep keyboard housing (see page 16).

**Material:**  
aluminum

**Color:**  
light grey (RAL 7035)

**Configuration:**  
cable duct, installation hardware

Packs of	Part No. CP
1	<b>6017.500</b>



### Cross Member

for partitioning front of operator enclosure. Each side features a mounting channel for a CP 6058.000 or CP 6053.000 mounting kit.

**Material:**  
extruded aluminum, powder coated, textured, light grey (RAL 7035)

**Configuration:**  
1 cross member, 2 clip-in clamps,  
2 screws with washers, 2 trim strips

**Specify type and color of trim as indicated on page 10.**

For front panel width	Part No. CP
19" (482.6mm)	<b>6015.000</b>
per specification*	<b>6015.009</b>

\* Please indicate width of front panel.  
See pages 20/21 for technical details.



### Sealing Bar Trim Strip

partitions front of operator enclosure to provide support for two adjoining panels.

**Material:**  
aluminum profile .31" x .79"/8 x 20mm

**Configuration:**  
1 trim strip with installation hardware

For front panel width	Part No. CP
19" (482.6mm)	<b>6015.500</b>
per specification*	<b>6015.009</b>

\* Please indicate width of front panel.  
See pages 20/21 for technical details.



### Rear Wall, 1.75"/45mm Deep

increases installation depth of operator enclosure from 6.10" to 7.87"/155 to 200mm. Especially suitable for control installations with built-in 3.5" drives or cables on rear.

**Material:**  
sheet steel

**Finish:**  
powder coated, light grey (RAL 7035)

**Configuration:**  
Hinged on side and fastened with hidden screws. Special depths and versions available on request.

Suitable for housings with front panel	Part No. CP
19"/7U	<b>6014.000</b>
per specification*	<b>6014.009</b>

\* Please indicate:  
– number and dimensions of front panels  
– number of cross members and/or sealing bar trim strips  
– rear panel depth  
or:  
–depth of rear wall and your order No.



### Rear Wall, 9.64"/245mm Deep

offers additional 9.64"/245mm installation space. By increasing installation depth of 19"/ 7U operator enclosures from 6.10" to 15.75"/155 to 400mm, deep components such as standard monitors can be easily installed.

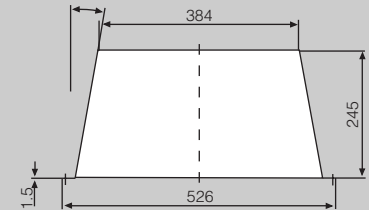
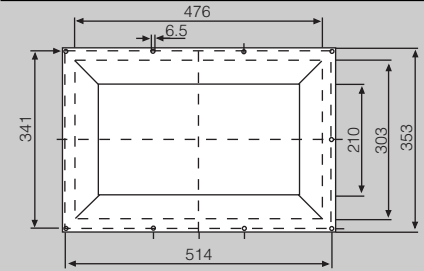
**Material:**  
aluminum

**Finish:**  
powder coated, light grey (RAL 7035)

**Configuration:**  
Screw-on

**Note:**  
Special designs and sizes for rear walls are available on request.

Packs of	Part No. CP
1	<b>6018.000</b>



### Aluminum Front Panel

for panel mounting of control components that cannot be mounted directly to the mounting channels.

Requires a CP 6058.000 installation kit.  
Special sizes and versions available on request.

**Material:**  
29 ga/3.0mm, natural anodized aluminum

**Note:**  
See pages 10/11 for cross members that are required for partitioning the front of VIP 6000 operator enclosures.

Height	Width	P. of	Part No. CP
3.5U/ 155.0mm	19"/ 482.6mm	1	<b>6027.000</b>
4U/ 177.0mm	19"/ 482.6mm	1	<b>6019.000</b>
7U/ 310.3mm	19"/ 482.6mm	1	<b>6028.000</b>
11U/ 493.8mm	19"/ 482.6mm	1	<b>6029.000*</b>

\* Can also be used instead of a combination of CP 6027.000, CP 6028.000 and cross members.

Front panel thickness maximum 0.14"/3.5mm



### Installation Kit

for mounting:

- aluminum front panels
- control panels
- keyboards

on operator enclosures and in keyboard housings.

For front panels	Thread	Part No. CP
Rittal and others	M4	<b>6058.000</b>
Others	M5	<b>6053.000</b>

Packs of = 30 sets of:  
clip-in clamps, cage nuts, screws, and washers.

Installation of control panels with studs requires only clip-in clamps.



### Handle Kit

mounts to pre-drilled corner pieces of housing frame.

**Material:**  
*Handle grip:* natural anodized aluminum  
*Handle grip brackets:* die-cast zinc

**For horizontal mounting on:**

- operator enclosure
- keyboard housing

For enclosure width	Part No. CP
19"/482.6mm	<b>6101.000</b>

**Configuration:**  
2 brackets, 1 handle grip, 2 screws

**Can easily be shortened, if required.**  
**Special lengths are also available.**

**For vertical mounting on side of:**

- operator enclosure
- keyboard housing

For enclosure height	Part No. CP
7U	<b>6102.000</b>
7 + 3.5U*	<b>6103.000</b>
3.5U	<b>6104.000</b>
H = 240mm	<b>6105.000</b>
4U	<b>6106.000</b>

\* divided by CP 6015.000 cross member

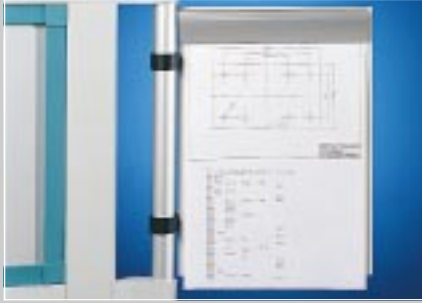
**Configuration:**

4 brackets, 2 handle grips, 4 screws

**Accessories:**

CP 6514.500 keyboard bracket, see page 29.

1U=1.75"



### Clip Board

displays manuals, drawings, etc. at eye level. Can be mounted on handle grips (required) on either left or right side by reversing clamps. Fits operator enclosures with a front panel height  $\geq 7.87"/200\text{mm}$ .

**Material:**

*Clip board:*  
sheet steel, painted light grey (RAL 7035)  
*Mounting clamp:*  
natural anodized aluminum

Packs of	Part No. CP
1	<b>6013.000</b>

A CP 6102.000 or CP 6103.000 handle is required for installation.  
Special sizes available on request.



### Installation Bracket

can be used for all general installation purposes especially for mounting of:

- door bars **PS 4596.000**
- installation rails **PS 4933.000/**  
**PS 4938.000**
- C-rails **PS 4943.000**
- system bars **PS 4171.000**
- system chassis **PS 4376.000**
- system chassis **PS 4370.000**
- mounting panel **KL 1565.000/**  
**KL 1569.000**

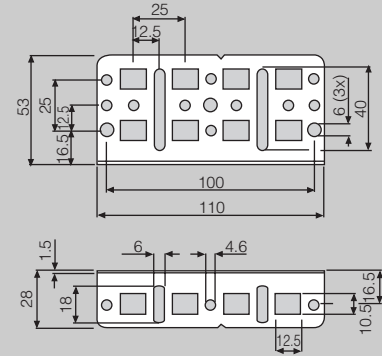
**Material:**

sheet steel, zinc plated, chromated

**Configuration:**

4 installation brackets, 12 self-tapping  
M5 x 10mm screws

Packs of	Part No. CP
4	<b>4597.000</b>



### Flat Installation Bracket

can be used for all general installation purposes.

**Material:**

sheet steel, zinc plated, chromated

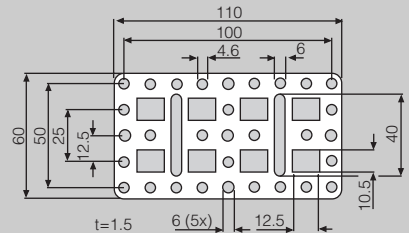
**Configuration:**

4 installation brackets, 12 self-tapping M5 x  
10mm screws

**Note:**

For DIN rails, please reference Rittal  
Handbook 29 page 733.

Packs of	Part No. CP
4	<b>4532.000</b>



### Horizontal Support Strips

have installation holes at  $.98"/25\text{mm}$  intervals and can be directly screwed to frame to provide an easy way of installing cable ducts and other components. Installation hardware included.

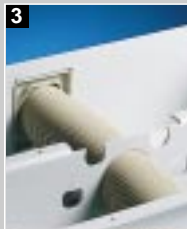
**Material:**

sheet steel, zinc plated, chromated

**Configuration:**

Screws, BZ 5.5 x 13

For enclosure depth	Packs of	Part No. PS
16"/400 mm	20	<b>4694.000</b>
20"/500 mm	20	<b>4695.000</b>
24"/600 mm	20	<b>4696.000</b>
31"/800 mm	20	<b>4697.000</b>



## Pedestal/Platform

provides good line of site for remote applications.

Standard configuration includes:

- 1** knockouts for PG strain connector inserts (EL 2235.010 to EL 2235.080) or cable conduit adaptors up to  $\varnothing$  70mm for perfect cable routing
- 2** integrated cable collecting angle
- 3** knockout for concealed mounting of cable conduit adaptors up to PG 36 or M 50

The pedestal can be customized for any environment with the following accessories:

- 4** DK 7495.000 twin wheel castors
- 5** PS 4611.000 castors
- 6** PS 4612.000 levelling feet
- 7** KL 1580.000 or 1590.000 wallmounting bracket

**Material:**  
sheet steel

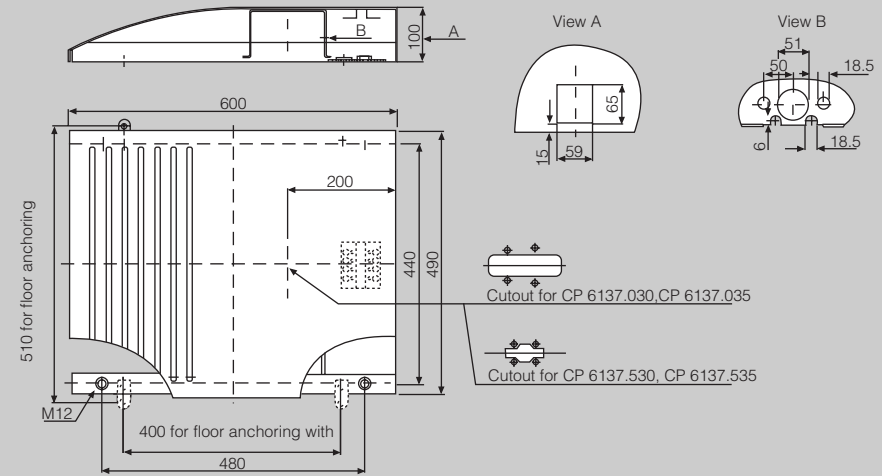
**Finish:**  
powder painted, textured, stone grey (RAL 7030) or light grey (RAL 7035)

**Configuration:**  
pedestal/floor plate with integrated reinforcement and installation cutout for CP 6000 or CP 6500 support arms; includes installation hardware for support arms

For support arm	Color RAL	Part No. CP
CP 6500	7030	<b>6137.530</b>
CP 6500	7035	<b>6137.535</b>
CP 6000	7030	<b>6137.030</b>
CP 6000	7035	<b>6137.035</b>

**Note:**

For CP 6000 and 6500 accessories, please reference pages 37-43.







## Pedestal

Enclosure is installed by means of:

- fixed CP 6525.500 enclosure coupling
- rotating CP 6525.000 enclosure coupling

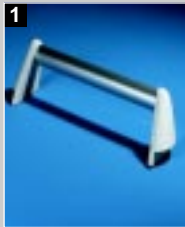
See Handbook 29, page 160.

Height	Footprint Width x Depth	Installation cutout for cable duct adaptor	Part No. CP
39.37" 1000mm	23.62" x 27.56" 600 x 700mm	no	<b>6141.000</b>
		yes	<b>6141.100</b>

## Pedestal for PC housings

for direct, fixed mounting.

Height	Footprint Width x Depth	Installation cutout for cable duct adaptor	Part No. CP
39.37" 1000mm	27.56" x 31.50" 700 x 800mm	yes	<b>6142.100</b>



### 1 2 Foot rest

Packs of 2 connection braces,  
1 round pipe

### 3 4 Trim panel

can be mounted in front or rear.

For pedestal	Packs of	Part No. CP
CP 6141.100 CP 6141.100	1 set	<b>6145.100</b>

For pedestal	Packs of	Part No. CP
CP 6141.000 CP 6141.100	1	<b>6144.100</b>



### 5 6 Cable duct adaptor

for CP 6141.000\*, CP 6141.100  
and CP 6142.000\*, CP  
6142.100 pedestals.

- \* Requires drilling in pedestal.
- Will accept cable ducts up to  
d = 2.75"/70mm.
- Angled at 55° to allow large  
bending radius for cable duct.

### Technical details:

*Die-cast feet with installation holes for:*

- bolting to floor.
- twin castors:  
DK 7495.000  
(see Handbook 29, p. 668).
- levelling feet PS 4612.000  
(see Handbook 29, p. 668).

*Steel cross bar:*

- other widths available upon request
- bottom cable entry opening.

*Pedestal column:*

- welded to steel cross bar
- oval, two-part casing can be easily  
opened to permit easy cable  
access.





## Panel Lift

can be adapted to each operator's height requirements and ensures a comfortable operating position.

- Height adjustment up to 17.32"/440mm
- Self-braking action, which prevents sliding – even under high loads
- Accepts CP 6500 couplings and brackets (CP 6000 requires a CP 6528.000 connection adaptor)
- Can be installed horizontally or vertically

### Technical specifications:

Electric version:

- 230 V, 50 Hz
- 110 – 120 V, 60 Hz also available
- Control unit with 3'/1 m coiled cable

Manual version:

- Operated by hand crank

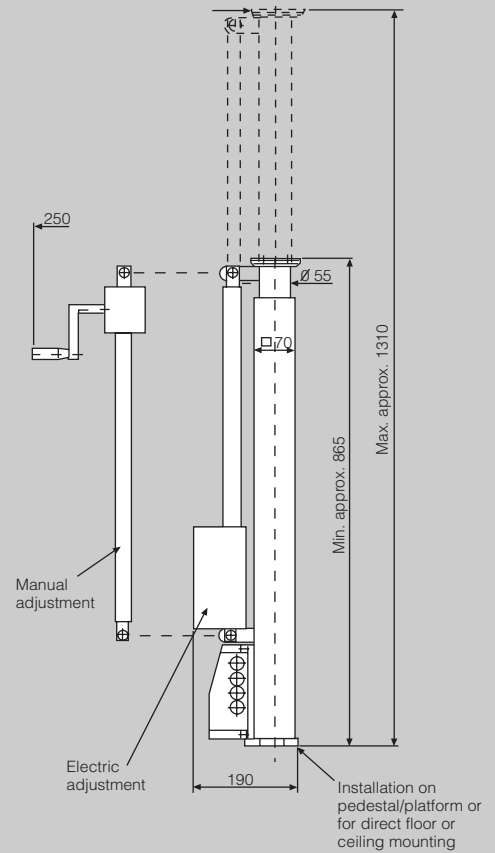
### Color:

light grey (RAL 7035)

### Configuration:

Tube with screw gear – electric or with hand crank; includes installation hardware for pedestal/platform

Panel lift	Part No. CP
electric	<b>6138.000</b>
manual	<b>6139.000</b>



## Mobile Pedestal For CP 6000 And CP 6500

offers operator friendliness and installation flexibility for CP operator enclosure applications. All CP and similar operator enclosures can be mounted on the special coupling plate of the CP 6136.000 mobile pedestal. Large castors facilitate easy movement, even on uneven floors; the front castors feature brakes. The base allows for easy cable entry while cables can be routed through the support pillar.

### Color:

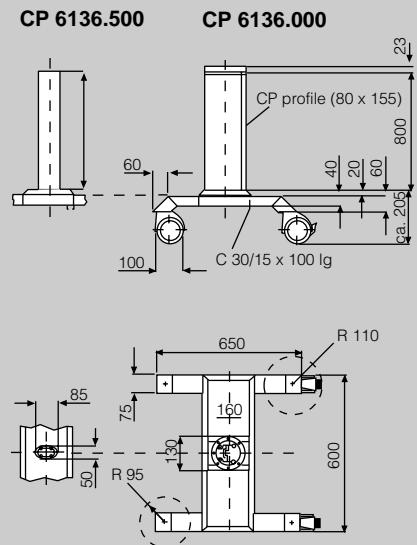
Castors: black (RAL 9005)

Pedestal: grey (RAL 7030/7035)

### Configuration:

Mobile base with 4 castors, including two with integral brake; support pillar.  
Only for CP 6136.000:  
special coupling; installation hardware.

Pedestal with mounting plate	Part No. CP
CP 6000	<b>6136.000</b>
CP 6500	<b>6136.500</b>





### VIP 6000 Equipment Shelf

flexible alternative for fast and easy placement of monitors or measuring instruments or just to set down manuals or other paper work.

- Monitor shelf has slots to fix equipment in place
- No-slip pad
- Reinforced sides allow high loads
- Accepts all VIP 6000 system components (keyboard housing, handles, etc.)
- Can be mounted directly to a CP 6500 support arm system (and to a CP 6000 support arm system with a CP 6528.000 adaptor)
- Special holes accept SZ 2597.000 cable ties
- Cable entry via 2 holes with rubber cable entry bushings (Ø 2.36"/60mm), one on each side
- Optional mouse pad and keyboard cradle

	<b>Part No. CP</b>
Equipment shelf	<b>6512.000</b>

**Material:**

*Frame:* aluminum

*Monitor panel:* sheet steel, 14 ga/2.0mm

**Color:**

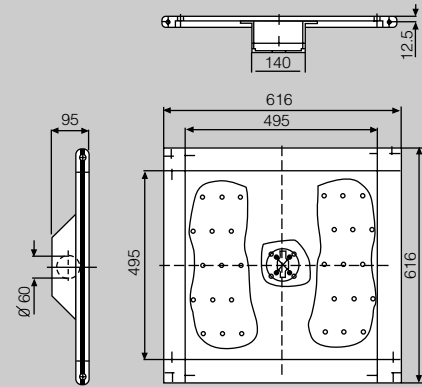
*Monitor shelf:* light grey (RAL 7035)

*Pad:* stone grey (similar to RAL 7030)

*Frame:* light grey (RAL 7035)

**Configuration:**

Equipment shelf with no-slip pad, 2 rubber cable entry bushings, installation kit for mounting equipment



### Mouse Pad For VIP 6000 Equipment Shelf

can be mounted on left or right side of equipment shelf and slides out for use.

**Material:**

sheet steel with no-slip surface

**Color:**

light grey (RAL 7035)

**Configuration:**

mouse pad, installation hardware

	<b>Part No. CP</b>
Mouse pad	<b>6516.000</b>



### Keyboard Cradle

accepts standard keyboards.

1. Can be mounted directly to:

- VIP 6000 equipment shelf

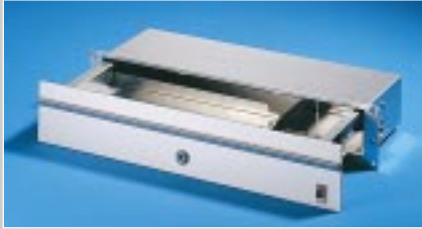
or

2. can be mounted in conjunction with horizontal handle (CP 6101.000) to:

- keyboard housing
- VIP 6000 operator enclosure (by simply bending bracket)

Max. keyboard depth	<b>Part No. CP</b>
9.06"/230mm	<b>6514.000</b>

Max. keyboard depth	<b>Part No. CP</b>
8.27"/210mm	<b>6514.500</b>



### Keyboard Drawer 19"/2U

can be mounted in all VIP 6000 enclosures and 19" systems or on any sufficiently large surface (door, side wall, etc.). Its low weight (5.5 lb/2.5 kg) makes it ideal for use in support arm systems because adequate room remains for cabling, even when the support arm is connected from below. It can also be locked with a 3524 E lock.

High mechanical protection and shielding is maintained, even when the drawer is open.

**Technical data:**

- **Total available space:**  
15.35" x 1.26" x 5.47"/390 x 32 x 139mm.
- Drawer has 2.36"/60mm high space on right for a mouse or trackball or for a 3 1/2" disk drive.
- When a mouse is used or when a 3 1/2" drive is installed, only enough space remains for an 11.2"/284mm wide keyboard.

Height	Width	Depth	Part No. CP
2U	19"/482.6mm	5.90"/150mm	<b>6002.000</b>

**Material:**

*Frame:*  
sheet steel, zinc-plated, chromated

*Drawer housing and drawer:*  
aluminum

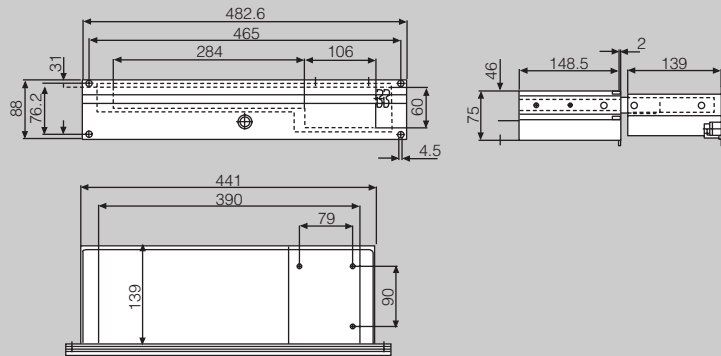
*Front panel and handle:*  
aluminum, natural anodized

**Configuration:**

Drawer housing with drawer, includes slides with stops for 'open' position, front panel with handle, gasket and installation hardware.

**Note:**

For installation in VIP 6000 operator enclosures we recommend cross members that are required for partitioning (see pages 10/11).



### Keyboard Drawer With Mouse Pad

with 19", 3U front panel for installation on VIP 6000 operator enclosures and all sufficiently large surfaces (door, side wall, etc).

**Technical data:**

- Accepts keyboards up to  
H x W x D = 1.65" x 18.11" x 6.69"  
460 x 42 x 170mm.
- Storage area for mouse under side of keyboard.
- Front pull-out mouse pad.
- Front panel:
  - reversible, for track-ball,
  - lockable, No. 3524E insert,
  - features grip.
- High protection rating and EMC shielding is maintained, even when drawer is open.

Height	Width	Depth	Part No. CP
3U	19"/482.6mm	232mm	<b>6003.000</b>

**Material:**

*Mounting frame:*  
steel, zinc-coated, chromated

*Keyboard housing and tray:*  
aluminum

*Front panel and grip:*  
aluminum, natural anodized





## Mouse, Mouse Pad IP 67

offers ideal input equipment for all applications in very dirty environments or in areas that require a high degree of hygiene such as the food and pharmaceutical industries. Because the mouse operates in an inductive manner, the ball can be omitted and the housing can be completely sealed with a protective film which results in an extremely high NEMA 6 and 6P/IP 67 protection rating. The mouse operates in conjunction with the IP 67 inductive mouse pad and is available with either COM or PS/2 interfaces.

### Material:

Mouse pad: PBT plastic  
 Mouse: ABS plastic

### Color:

Mouse pad: grey (similar to RAL 7035)  
 Mouse: grey (similar to RAL 7032)

### Technical details:

#### NEMA 4/IP67 mouse

7-pin DIN connector

#### Mouse pad with COM interface

Mouse pad – PC connection:  
 9-pin D-SUB connector,  
 5-pin DIN connector

#### Mouse pad with PS/2 interface

Mouse pad – PC connection:  
 PS/2 connector

#### Temperature range:

32°F to +131°F / 0°C to +55°C

#### Rated current:

< 20 mA

#### Pad dimensions (H x W x D):

8.07" x 9.84" x .59"/205 x 250 x 15 mm

#### Cable length:

6.9 ft. / 2000 mm

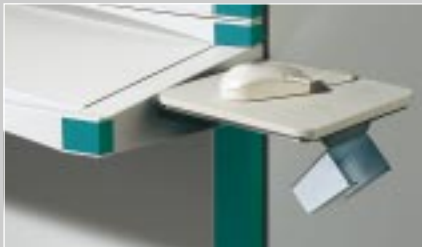
Runs under DOS, Windows 3.1/3.11,

Windows 95/ 98, Windows NT

### Accessories:

SZ 2400.500 cable flange

	H x W x D	Packs of	Part No. SM
P 67 inductive mouse pad COM interface	8.07" x 9.84" x .59"/ 205 x 250 x 15 mm	1	<b>6444.000</b>
P 67 inductive mouse pad PS/2 interface	8.07" x 9.84" x .59"/ 205 x 250 x 15 mm	1	<b>6444.500</b>
IP 67 mouse for both COM and PS/2 interface	—	1	<b>6445.000</b>



## Mouse Pad Tray For Desk Consoles

can be mounted on operator interface enclosures with a desk console (ie PC) or on other AP Series consoles for accommodation of SM 6444.000 and SM 6444.500 IP 67 mouse pads. The slope of the mouse pad tray can be infinitely adjusted. Installation requires drilling two installation holes in the console.

### Material:

sheet steel, chromated

### Configuration:

mouse pad tray, installation hardware

For	Packs of	Part No. SM
PC 4610.503 PC 4603.704 AP Series consoles	1	<b>2380.000</b>



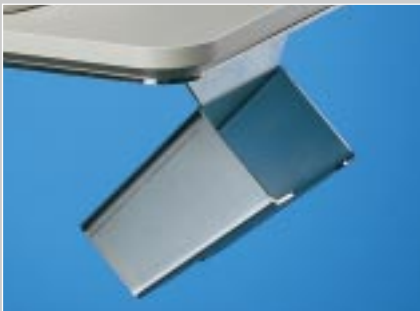
### Mouse Pad Tray

is mounted on vertical handles of VIP 6000 operator and keyboard housings for accommodation of SM 6444.000 and SM 6444.500 IP 67 mouse pads. The slope of the mouse pad tray is infinitely adjustable. Installation requires drilling two installation holes in the handle grip brackets.

**Material:**  
sheet steel, chromated

**Configuration:**  
mouse pad tray, installation hardware

For	Packs of	Part No. SM
VIP 6000 with handles on sides	1	<b>2381.000</b>



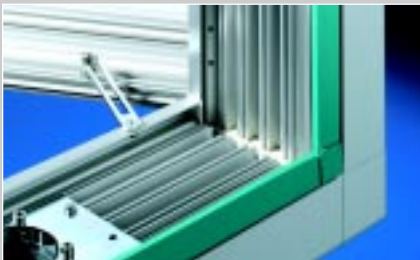
### Mouse Holder

fits Rittal mouse pad trays to ensure safe storage of a standard mouse or the Rittal SM 6445.000 IP 67 mouse.

**Material:**  
sheet steel, chromated

**Configuration:**  
mouse holder, installation hardware

Packs of	Part No. SM
1	<b>2382.000</b>



### Hinged Door Stop

- To secure open panel.
- Bottom mount.
- Takes up only .4"/10mm of installation height.
- Opening angle adjustable up to 120°.

**Material:**  
sheet steel, zinc-coated, chromated

Packs of	Part No. CP
1	<b>6045.000</b>

1 Pack = 1 door stop, installation hardware



## Interface Box

accommodates secure installation of computer ports, 3 1/2" drives, and sockets. The lockable, hinged, metal cover ensures a high load capacity, protection against unauthorized access, and provides a high degree of shielding against built-in components.

Customers can specify the following modifications:

- different dimensions
- acrylic door
- cutouts for plugs

### Material:

*casing:* extruded aluminum  
*housing:* sheet steel, 16 ga/1.5mm  
*cover:* aluminum, 29 ga/3.0mm

### Finish:

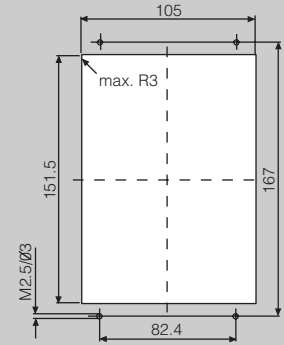
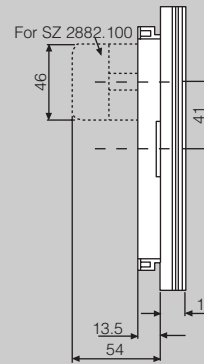
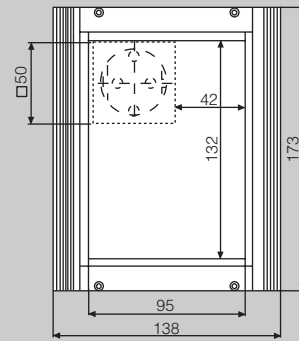
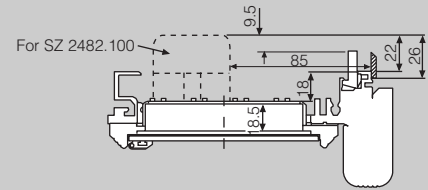
*casing and housing:*  
 powder painted, light grey (RAL 7035)  
*cover:* natural anodized

	Part No. SZ
No socket	<b>2482.000</b>
With 220 V socket	<b>2482.100</b>

### Configuration:

casing with hinged cover, cam/latch lock with 3524 E security insert, housing, gasket, installation hardware

### Installation example for VIP 6000



Installation cutout



## Cable Tie Fastener

for all standard cable ties up to a width of 3/16"/4.8mm. The fastener is inserted in a mounting channel and fixed in place by striking the split-rivet.

### Material:

polyamide 6.6

Packs of	Part No. CP
100	<b>6059.000</b>



## Mounting Kit For Threaded Bolts

for fastening

- aluminum front panels
- control panels
- keyboards

to VIP 6000 operator and keyboard housings with threaded bolts.

Thread	Part No. CP
M4	<b>6058.500</b>
M5	<b>6053.500</b>

1 Pack = 10 retainers, 10 socket screws



### Cable Collecting Angle For Operator Enclosures

fits CP 6000 and CP 6500 support arm cutouts.

- Cable fastening via: cable clamps (see Handbook 29, page 676)
- or
- quick-fix cable ties SZ 2597.000 (see Handbook 29, page 754) standard cable ties.

**Angle height:**

= .98"/25mm for 1.57"/40mm C-rail.

**Material:**

sheet steel, zinc-coated, chromated

Packs of	<b>Part No. CP</b>
1	<b>6052.000</b>

1 Pack = 1 cable collecting angle,  
1 C-rail,  
self-tapping M5 x 10mm screws



### Connection Adaptor: VIP 6000 To CP 6000 Support Arm

Depth (mm)	For control panel	Part No. CP Connection adaptor
155, 295	<b>1 4 5</b>	<b>6528.500</b>
185	<b>2 3</b>	<b>6528.000*</b>
328, 438	<b>6 7 8 9</b>	<b>not required</b>

\* see Handbook 29, page 161.  
Note: housings with cooling fins on all sides require the CP 6528.500 adaptor.

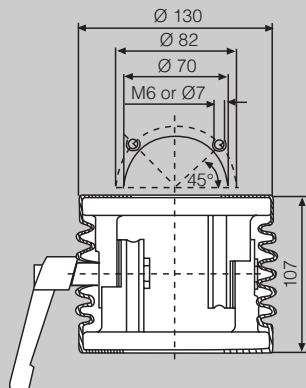
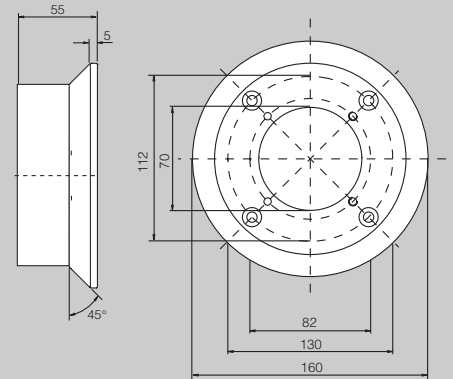
**Color:**

stone grey (RAL 7030)

**Configuration:**

cast aluminum, includes gaskets and installation hardware.

Weight	<b>Part No. CP</b>
1.5 lb/0.7 kg	<b>6528.500</b>



### 45° Tilting Adaptor

can be used instead of 30° tilting adaptor (see Handbook 29, page 161).

Internal gear allows adjustments in 7.5° increments.

Mounted directly to CP 6500 support arm system with:

- CP 6525.000 enclosure coupling
- CP 6525.500 enclosure coupling
- CP 6526.000 90° enclosure coupling

**Configuration:**

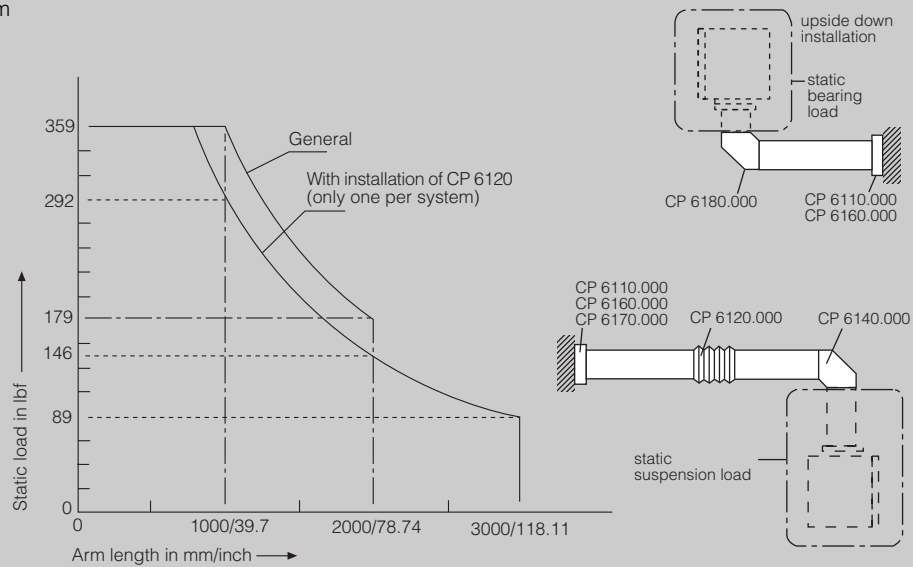
cast aluminum, includes gaskets and installation hardware. Cannot be used as a support base bracket.

Weight	<b>Part No. CP</b>
2.2 lb/1.0 kg	<b>6529.500</b>



# CP 6000 Pendant Arm System

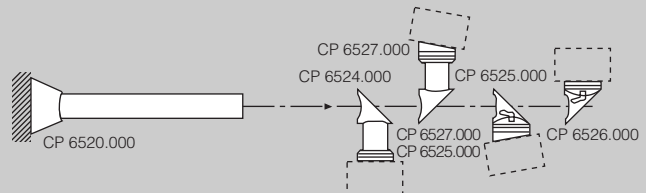
Rittal's flexible CP 6000 pendant arm system offers many advantages over conventional support arm systems. With its extensive range of support arms, journals, and couplings, it offers a sophisticated solution for virtually every application.



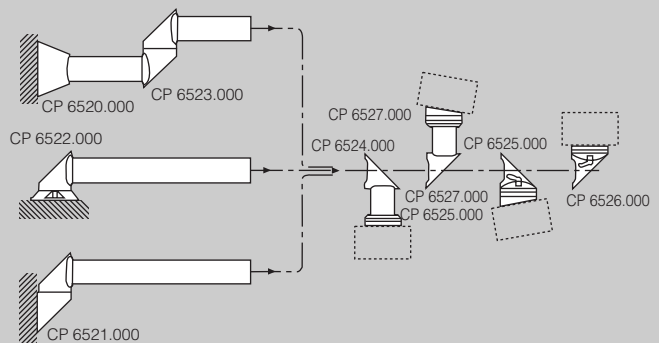
# CP 6500 Pendant Arm System

Rittal's CP 6500 pendant arm system has been designed for small control panels and enclosures. It offers a complete program of ducts, brackets, and couplings for a wide variety of applications.

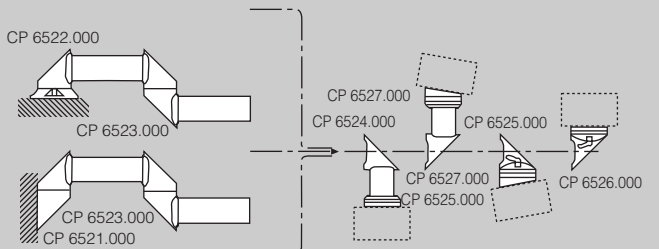
**A: System configuration without coupling**



**B: System configuration with one coupling**

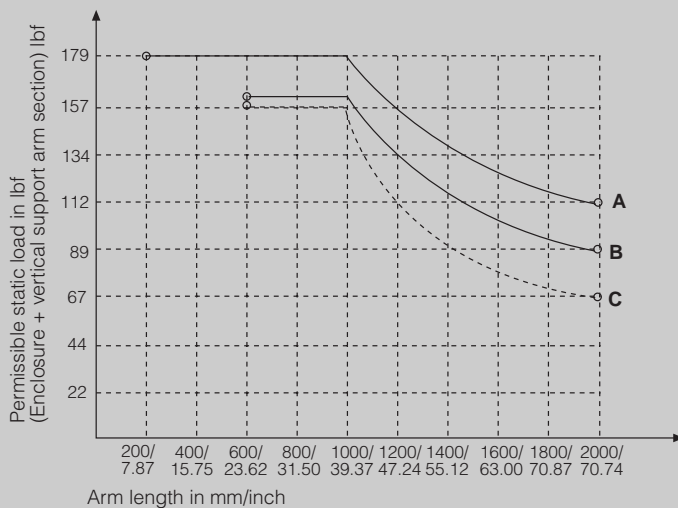


**C: System configuration with two couplings**

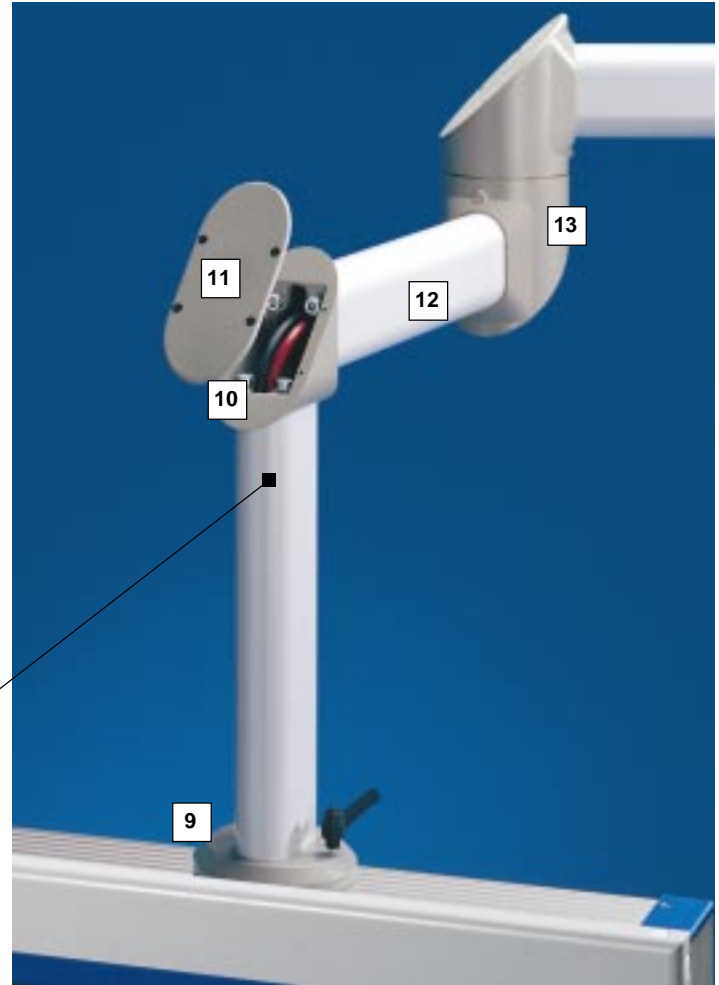
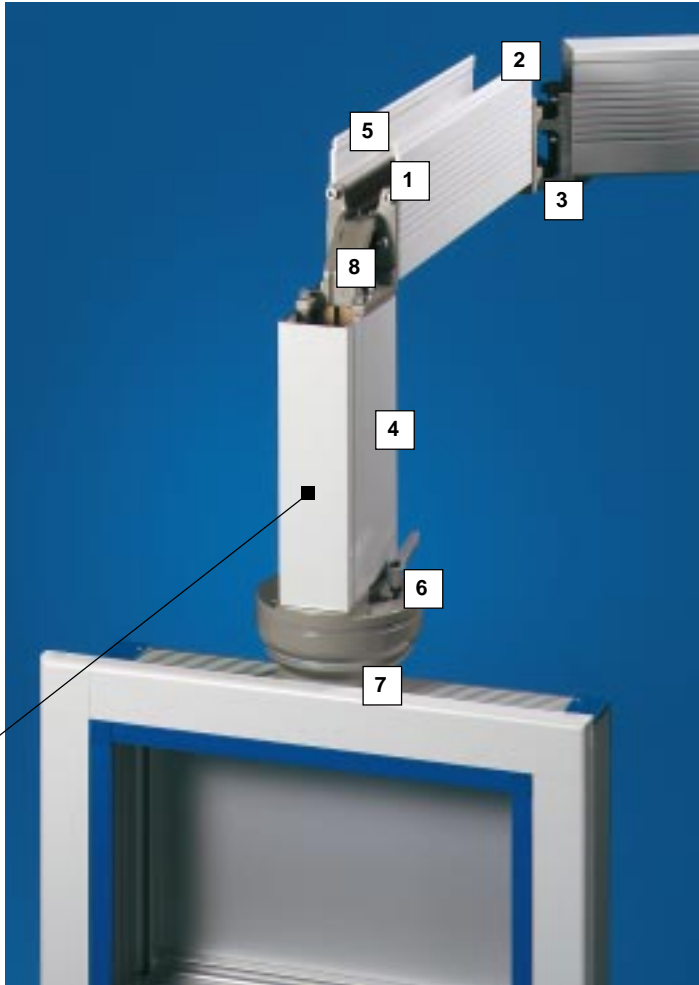


**Permissible load depending on system configuration**

Only one CP 6523.000 swivel coupling per system!



# PENDANT ARM SYSTEMS



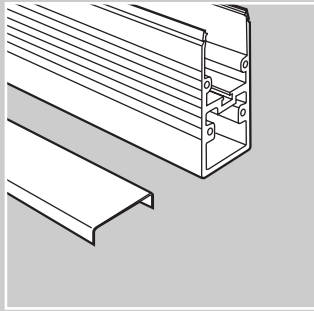
## CP 6000

- 1** Self-tapping screws for easy and fast installation of the pendant arm system.
- 2** Cover (included) clips easily into extruded slot.
- 3** Swivel coupling connects horizontal support arms.
- 4** Torsion resistant extruded aluminum support arms have high load-bearing capacity and attractive styling.
- 5** Cable routing before and after system installation is easy because one side of the support arm is open.
- 6** Enclosures can swivel continuously up to 350° depending on coupling.
- 7** Adaptor VIP 6000 to CP 6000 support arm.
- 8** 90° angle piece secures stable connection between support arms and allows easy routing of pre-manufactured cables.

## CP 6500

- 9** Enclosure coupling can be used for top or bottom installation of an enclosure to a support arm system.
- 10** Self-tapping screws for easy and fast installation of the pendant arm system.
- 11** Plastic covers with gaskets are easily removed for access to cables.
- 12** Torsion-resistant extruded aluminum support arms can be cut to size.
- 13** Swivel coupling connects horizontal support arms.

# CP 6000 Accessories



## Support Arm

the basic component of a CP 6000 support arm system. Connection components are attached with self-tapping screws and make combinations of any desired length possible.

### Configuration:

bend- and torsion-resistant extruded aluminum complete with clip-on cover. Available in three different lengths.

### Color:

RAL 7035-light grey

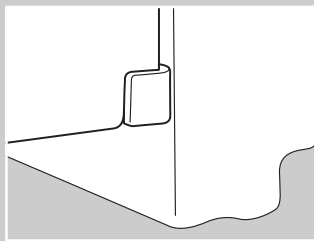
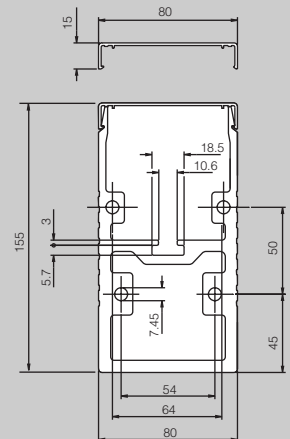
### Weight:

support arm: 6.0 lb./ft. /9.05 kg/m

### Cover:

.3lb./ft. / .45 kg/m

Length	Packs of	Part No. CP
19.69"/500mm	1	<b>6050.000</b>
39.37"/1000mm	1	<b>6100.000</b>
78.74"/2000mm	1	<b>6200.000</b>



## Adjustment Shim

allows adjustment of CP support arms after installation.

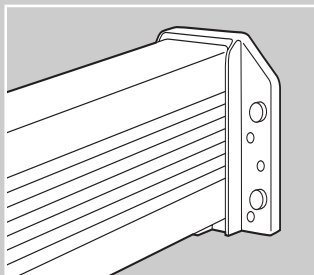
### Configuration:

bend- and torsion-resistant extruded aluminum complete with clip-on cover. Available in three different lengths.

### Material:

sheet steel, zinc coated, yellow chromate.

Packs of	Part No. CP
10	<b>6205.000</b>



## Wall/Base Bracket

allows rigid mounting of the support arm system to vertical or horizontal surfaces.

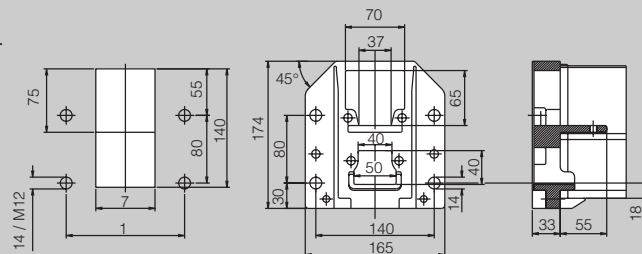
### Material:

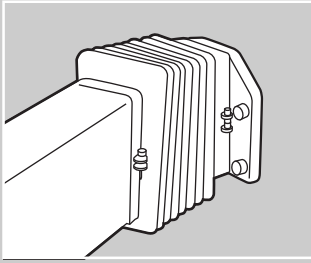
spheroidal graphite iron, includes gaskets and installation hardware.

### Color:

RAL 7030-stone grey

Weight	Packs of	Part No. CP
7.9 lb/3.6 kg	1	<b>6160.000</b>





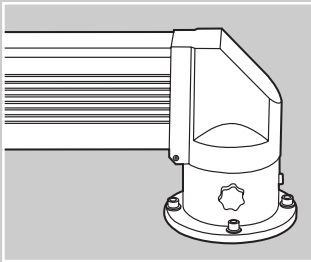
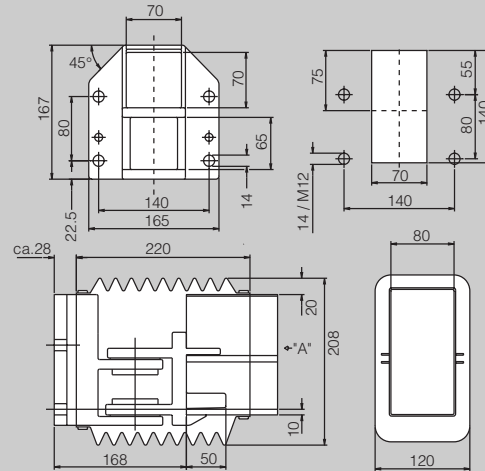
### Vertical Hinge

for installation of a swiveling support arm system to vertical surfaces.

**Material:**  
spheroidal graphite iron; rotates 180°, includes bellows, gaskets, and installation hardware.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
18.5 lb/8.4 kg	1	<b>6110.000</b>



### Horizontal Hinge

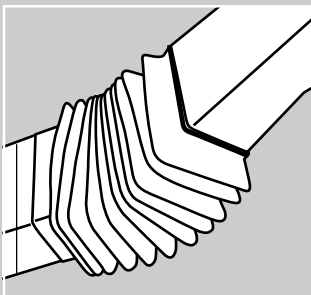
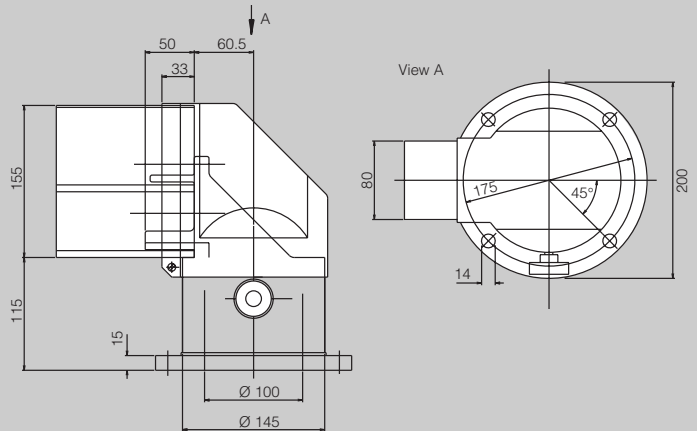
for installation of a swiveling support arm system to horizontal surfaces.

**Material:**  
steel and cast iron with plastic cover; maintenance free bearing, rotates 350°, with safety stop; includes gaskets and installation hardware.

**Note:**  
Not to be used as an enclosure coupling.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
24.2 lb/11.0 kg	1	<b>6170.000</b>



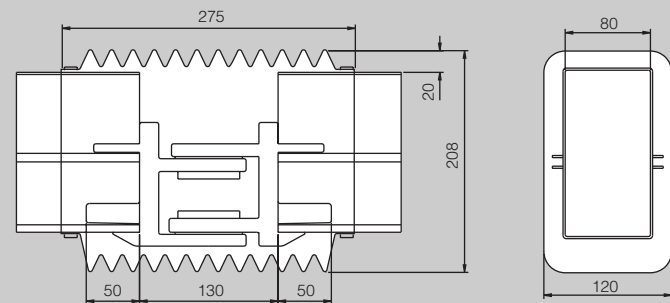
### Intermediate Hinge

connects horizontal support arms in a pendant arm system.

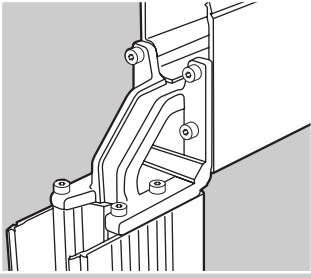
**Material:**  
spheroidal graphite iron; rotates 180°, includes bellows with zip fasteners for easy access to cable duct; gaskets, and installation hardware.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
13.4 lb/6.1 kg	1	<b>6120.000</b>







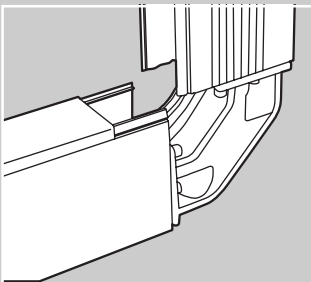
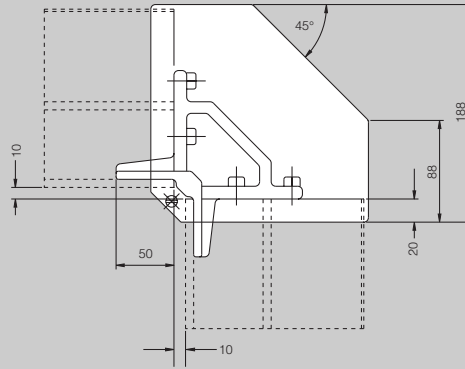
### 90° Arm Coupling

connects vertical (hanging) support arms to horizontal support arms.

**Material:**  
spheroidal graphite iron with protective plastic; gaskets and installation hardware.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
4.2 lb/1.9 kg	1	<b>6140.000</b>



### 90° Arm Coupling

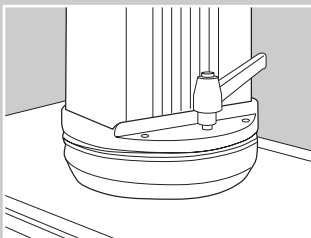
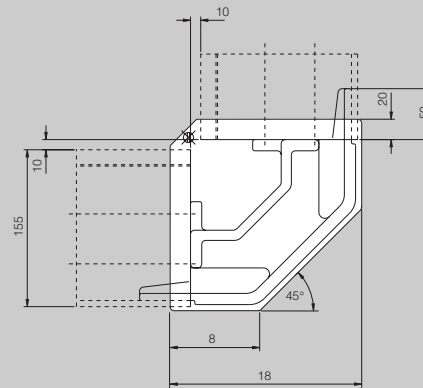
(for inverted mounting)

allows vertical support arm to be directed upwards from a lower horizontal support arm.

**Material:**  
spheroidal graphite iron with protective plastic cover; gaskets and installation hardware.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
7.0 lb/3.2 kg	1	<b>6180.000</b>



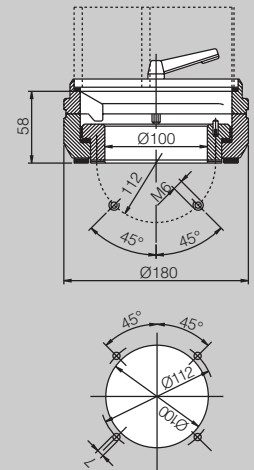
### Enclosure Coupling, Rotating

for top or bottom mounting of enclosures to vertical support arms.

**Material:**  
zinc die-cast; enclosure rotates infinitely through 350° and adjustable; maintenance-free bearing; includes gaskets and installation hardware. Not to be used as a support arm base bracket.

**Color:**  
RAL 7030-stone grey

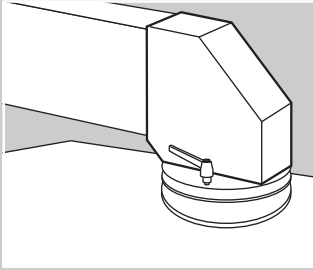
Weight	Packs of	Part No. CP
7.7 lb/3.5 kg	1	<b>6130.000</b>



### Enclosure Coupling, Fixed

for rigid top or bottom mounting of enclosures to vertical support arms.

Weight	Packs of	Part No. CP
3.1 lb/1.4 kg	1	<b>6130.500</b>



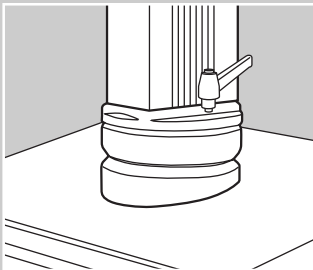
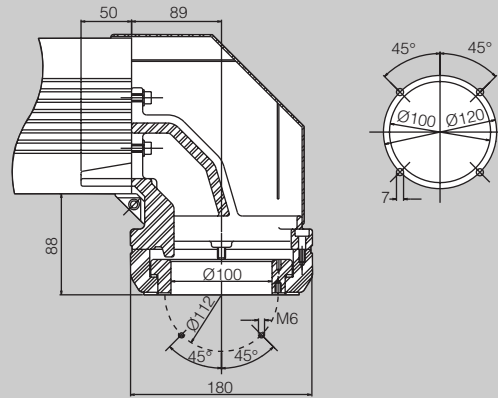
### Enclosure Coupling, 90°

for top or bottom mounting of enclosures to horizontal support arms without having to install an extra vertical support arm.

**Material:**  
spheroidal graphite iron and zinc die-cast; rotates 180° and can be locked in place; maintenance-free bearing; plastic cover; gaskets and installation hardware. Not to be used as a support arm base bracket.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
12.1 lb/5.5 kg	1	6040.000



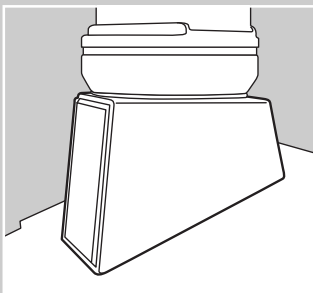
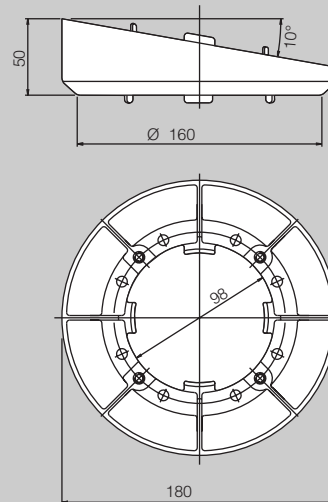
### Tilting Adaptor, 10°

tilts enclosure for increased ease of operation. Installs between enclosure and enclosure coupling or 90° arm coupling.

**Material:**  
zinc diecast; comes with gaskets and installation hardware.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
2.6 lb/1.2 kg	1	6023.000



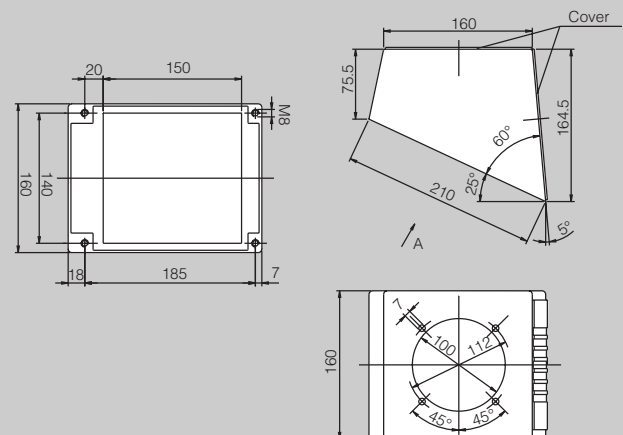
### Tilting Adaptor, 25°/60°

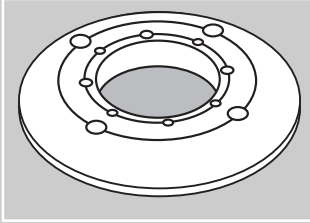
tilts 25° or 60° and installs between an enclosure and CP 6130.000 enclosure coupling.

**Material:**  
zinc die-cast; comes with gaskets and installation hardware.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
8.4 lb/3.8 kg	1	6150.000





## Connection Adaptor CP 6000/CP 6500

makes the following, interchangeable connection options possible (in combination with an enclosure coupling):

### CP 6528.000

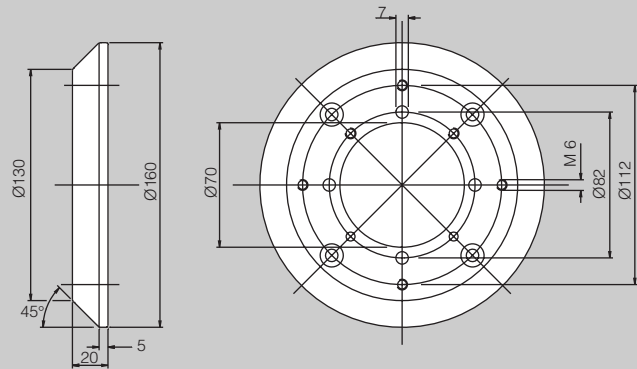
- Connect CP 6000 enclosures to a CP 6500 support arm system.
- Connect CP 6500 enclosures to a CP 6000 support arm system.

### CP 6528.500

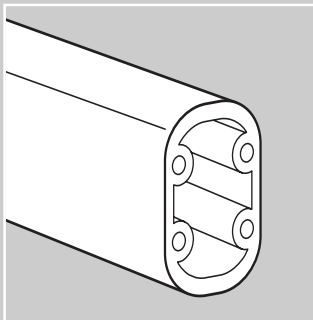
- For connecting VIP 6000 operator enclosures **1**, **4** and **5** to CP 6000 support arm system.

\* Not for VIP 6000 command panels **1**, **4** and **5**

Weight	Packs of	Part No. CP
1.1 lb/0.5 kg	1	<b>6528.000</b>
1.5 lb/0.7 kg	1	<b>6528.500</b>



# CP 6500 Accessories



## Support Arm

the basic component of a CP 6500 support arm system. Connection components are attached with self-tapping screws and make combinations of any desired length possible.

### Material:

Bend-and torsion-resistant extruded aluminum.

### Color:

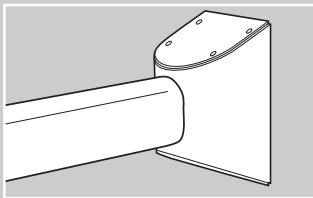
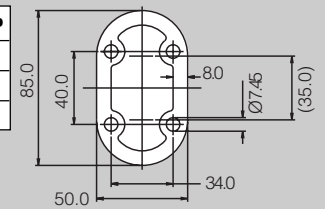
RAL 7035-light grey

### Weight:

3.16 lb./ft./4.7 kg./m

\* Adjustment shim included with the support arm system

Length	Packs of	Part No. CP
19.69"/500mm	1	<b>6511.000</b>
39.37"/1000mm	1	<b>6513.000</b>
78.74"/2000mm	1	<b>6515.000</b>



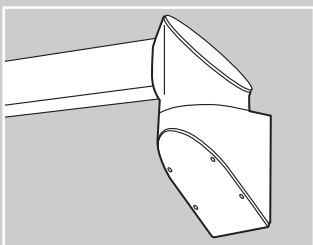
## Wall/Base Bracket

allows rigid mounting of the support arm system to vertical or horizontal surfaces.

### Color:

RAL 7030-stone grey

Weight	Packs of	Part No. CP
3.5 lb/1.6 kg	1	<b>6520.000</b>



## Vertical Hinge

for installation of a swiveling support arm system to vertical surfaces.

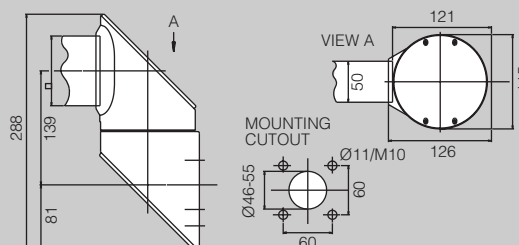
### Configuration:

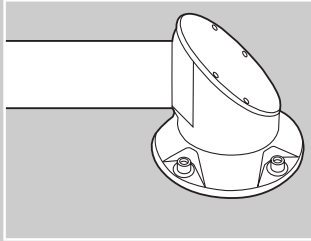
maximum rotation 350°, can be locked in place.

### Color:

RAL 7030-stone grey

Weight	Packs of	Part No. CP
6.2 lb/2.8 kg	1	<b>6521.000</b>





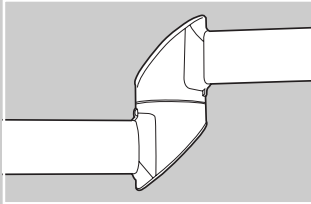
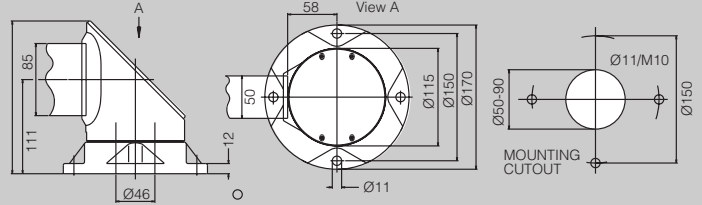
### Horizontal Hinge

for installation of a swiveling support arm system to horizontal surfaces.

**Configuration:**  
maximum rotation 350°. Not to be used as a coupling for enclosures.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
5.5 lb/2.5 kg	1	<b>6522.000</b>



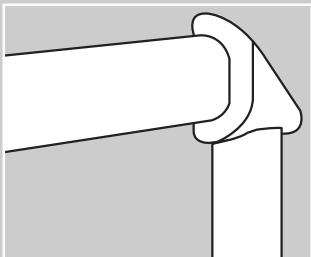
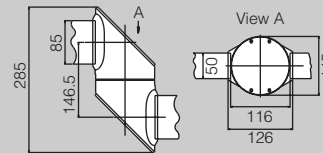
### Intermediate Hinge

connects horizontal support arms in a pendant arm system.

**Configuration:**  
maximum rotation 350°.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
5.5 lb/2.5 kg	1	<b>6523.000</b>



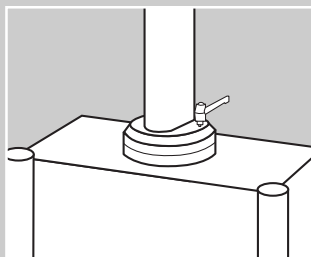
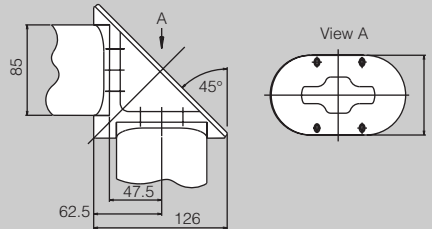
### 90° Arm Coupling (for inverted mounting)

allows vertical support arm to be directed upwards from a lower horizontal support arm.

**Configuration:**  
maximum rotation 350°. Not to be used as a base mounting bracket.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
1.1 lb/0.5 kg	1	<b>6524.000</b>



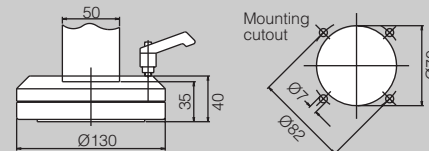
### Enclosure Coupling, Rotating

for top or bottom mounting of enclosures to vertical support arms.

**Configuration:**  
maximum rotation 350°. Not to be used as a base mounting bracket.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
3.3 lb/1.5 kg	1	<b>6525.000</b>

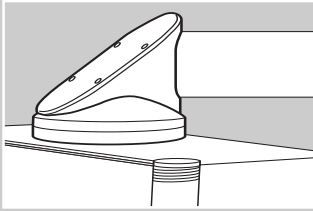




### Enclosure Coupling, Fixed

for rigid top or bottom mounting of enclosures to vertical support arms.

Weight	Packs of	Part No. CP
1.8 lb/0.8 kg	1	<b>6525.500</b>



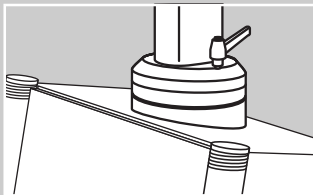
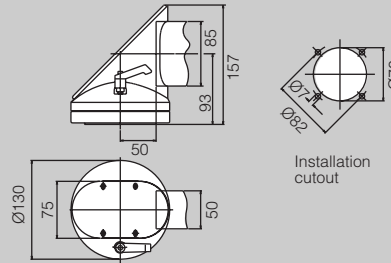
### Enclosure Coupling, 90°

for top or bottom mounting of enclosures to horizontal support arms without having to install an extra vertical support arm.

**Configuration:**  
maximum rotation 350°. Not to be used as a base mounting bracket.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
3.3 lb/1.5 kg	1	<b>6526.000</b>



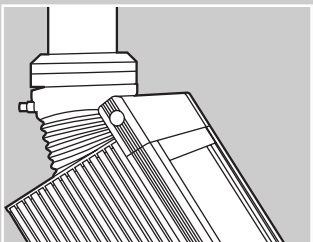
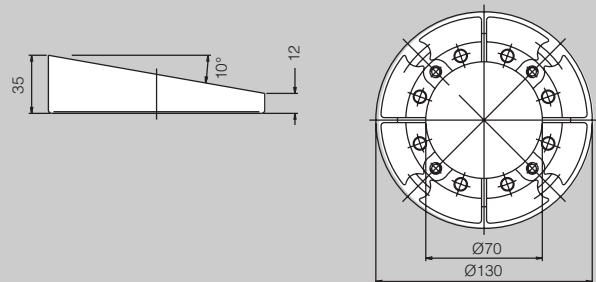
### Tilting Adaptor, 10°

tilts enclosure for increased ease of operation. Installs between enclosure and enclosure coupling or 90° coupling.

**Material:**  
zinc die-cast; comes with gaskets and installation hardware.

**Color:**  
RAL 7030-stone grey

Weight	Packs of	Part No. CP
1.3 lb/0.6 kg	1	<b>6527.000</b>



### Tilting Adaptor, 30°

can be infinitely adjusted (up to 30°) for optimum viewing position. Installs between support arm and:

- CP 6525.000 enclosure coupling
- CP 6525.500 enclosure coupling
- CP 6526.000 90° enclosure coupling

Weight	Packs of	Part No. CP
2.4 lb/1.1 kg	1	<b>6529.000</b>

# Cooling Solutions

## Cooling Solutions Sizing Guidelines

Monitor Heat Dissipation	Ambient Temperatures			
	Up to 77°F	78-87°F	88-97°F	97-113°F
30-50W	Fins on sides	Fins all around	A/C or filter fan	A/C
51-70W	Fins all around	A/C or filter fan	A/C or filter fan	A/C
71-170W	A/C or filter fan	A/C or filter fan	A/C or filter fan	A/C
171-250W	A/C or filter fan	A/C	A/C	A/C

**Note:** 1. assumes maximum monitor operating temp=45°C (113°F). Contact Rittal for other conditions.  
2. NEMA 12 filter fan configuration requires fine filter and sealing gasket.

Monitor Depth	VIP Configuration	A/C Part #	Filter Fan Part #
Up to 6.9" (172.5mm)	2.1 config 4	3201.100 or 3202.100	3323.100 or 3323.115
7.0-8.2" (175-205mm)	2.1 config 6	3201.100 or 3202.100	3323.100 or 3323.115
8.3-12.5" (207.5-312.5mm)	2.1 config 8	3201.100 or 3202.100	3323.100 or 3323.115

**Note:** 1. A/C requires screw-on configuration, filter fan can use hinged configuration

## VIP Series Small Air Conditioners



These new VIP Series small air conditioners were specifically developed for cooling VIP 6000 operator enclosures. They also offer a space and money saving solution for small enclosures with relatively low cooling requirements.

### Configuration:

- Fully wired - ready for connection.
- Air conditioner is mounted on 7U high rear wall of a VIP 6000 operator enclosure.
- Multi-lingual assembly instructions.

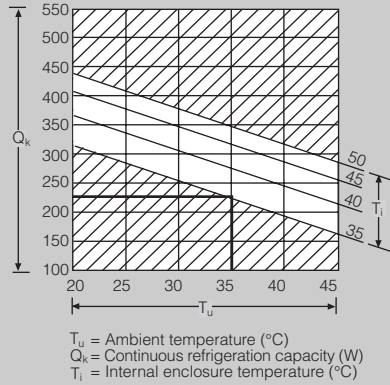
### Technical description:

- Useful cooling capacity 920 BTU/270 W at 60 Hz per DIN 3168 L35 L35.
- Specifically designed for VIP 6000 operator enclosures.
- Two models are available for optimum space utilization inside the VIP 6000 enclosure - one model has the condenser on the left side, the other on the right side.
- Customer specific solutions for other types of small enclosures are available on request.
- Optimum ratio between useful cooling capacity and unit size.
- Internal electronic temperature control.
- Over temperature monitoring inside enclosure via potential-free contact on the terminal block.

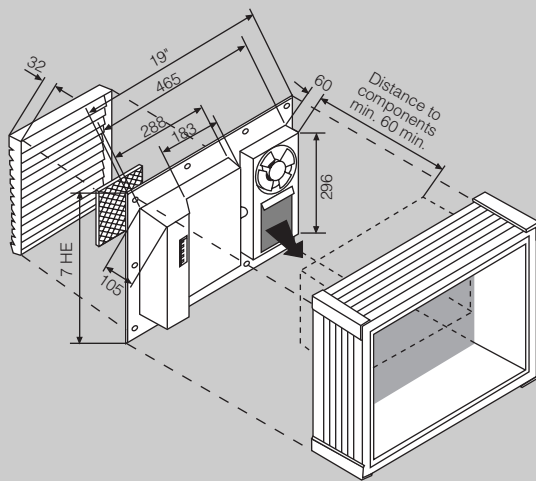
Part No. SK			3201.100 condensor/terminal block on left side	3202.100 condensor/terminal block on right side
Rated voltage V/Hz*	230/50/60*			
Dimensions (H x W x D)	H	7U		
	W	19"/482.6 mm		
	D	4.13"/105 mm		
<b>Useful cooling capacity Q<sub>k</sub> per DIN 3168</b>	<b>L35</b>	<b>L35</b>	<b>770/920 BTU / 225/270 W</b>	<b>550/680 BTU / 160/200 W</b>
Rated current, max.			1.5 A/1.5 A	
Starting current			1.9 A/2.0 A	
Pre-fuse T			4 A/4 A	
Power consumption P <sub>el</sub> per DIN 3168	L35	L35	285 W/300 W	315 W/325 W
Cooling coefficient= Q <sub>k</sub> /P <sub>el</sub>	L35	L35	0.8/0.9	
Refrigerant			R134 a, 6 oz/170 g	
Temperature range			+ 68°F to + 113°F/+ 20°C to + 45°C	
Ratings per EN 60 529/10.91			external circuit NEMA 2 (IP 34)/internal circuit NEMA 12/13 (IP 54)	

\* Other voltages available upon request. 115V available late 1999.

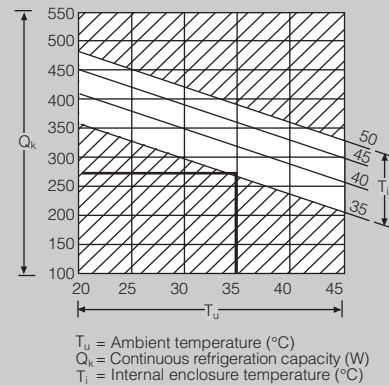
**Performance diagram  
SK 3201.100 / SK 3202.100  
(DIN 3168) (50 Hz)**



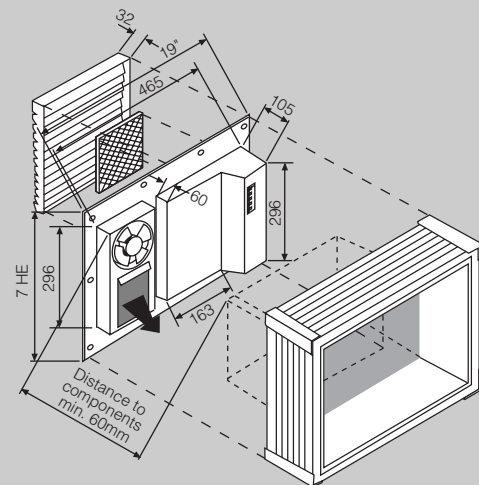
**SK 3201.100**  
(Version with condensor/terminal block LEFT)



**Performance diagram  
SK 3201.100 / SK 3202.100  
(DIN 3168) (60 Hz)**



**SK 3202.100**  
(Version with condensor/terminal block RIGHT)



## New Design Filter Fans



**Super flat filter fans in new design:  
95 to 465cfm/160 to 770 m<sup>3</sup>/h**

**Configuration:**

- Filter fan, complete, ready for installation; drilling template; filter.

**Color:**

- pebble grey (RAL 7032) or light grey (RAL 7035)

**Technical description:**

- Optimized air flow.
- Extremely flat design.
- Low noise.
- Air direction can be changed from blowing to drawing by simply turning the fan motor.
- 24 V DC models prevent interference e.g. to monitors.
- Protection rating can be increased up to NEMA 3R (IP 55).
- RPM's can be regulated.
- Housings are made of self-extinguishing (per UL 94-VO) heat-resistant plastic.
- Polyester filter provides 83% dust arrestance.
- UL/CUL recognized, CE marked.

Part No. for filter fan SK - pebble grey (RAL 7032)	3321.100	3321.115	3321.024	3322.100	3322.115	3322.024	3323.100	3323.115	3323.024
- light grey (RAL 7035)	3321.107	3321.117	3321.027	3322.107	3322.117	3322.027	3323.107	3323.117	3323.027
Rated voltage V/Hz	230/50/60	115/50/60	24 (DC)	230/50/60	115/50/60	24 (DC)	230/50/60	115/50/60	24 (DC)
<b>Air displacement at 60 Hz (unimpeded air flow)</b>	15cfm/25 m³/h			40cfm/66 m³/h			70cfm/120 m³/h		
<b>Air displacement at 60 Hz with standard exhaust filter</b>	1 x 3321.200: 11cfm/18m³/h			1 x SK 3322.200: 30cfm/50 m³/h 2 x SK 3322.200: 33cfm/55 m³/h 1 x SK 3323.200: 33cfm/55 m³/h			1 x SK 3323.200: 50cfm/82 m³/h 2 x SK 3323.200: 60cfm/98 m³/h 1 x SK 3325.200: 55cfm/90 m³/h		
<b>Air displacement at 60 Hz (with water-guard hood)</b>				33cfm/55 m³/h (with SK 3322.800)			60cfm/97 m³/h (with SK 3323.800)		
Axial fan with	shaded pole motor		DC motor	shaded pole motor		DC motor	shaded pole motor		DC motor
Rated current	69 mA	138 mA	86 mA	0.12 A	0.24 A	0.15 A	0.12 A	0.24 A	0.15 A
	58 mA	115 mA		0.11 A	0.23 A		0.11 A	0.23 A	
Power consumption	12.5/10.3 W		2.0 W	19 W/18 W	19 W/18 W	3.5 W	19 W/18 W	19 W/18 W	3.5 W
Noise level	41/46 dB (A)			46/49 dB (A)			46/49 dB (A)		
Temperature range	+ 14°F to + 131°F/- 10°C + 55°C								
A (mm)	116.5			148.5			204		
B (mm)	42			52			77.5		
C (mm)	90			122.5			176		
D (mm)	90			122.5			120		
E (mm)	92			124			177		
F (mm)	—			—			185		
G (mm)	—			—			92.5		
Ratings per EN 60 529/10.91	IP 43 standard. NEMA 3R/IP 55 when used with a fine filter in combination with a water-guard hood.						IP 43 standard. NEMA 12/IP 54 when used with a fine filter in combination with a filter fan sealing frame. NEMA 3R/IP 55 when used with a fine filter in combination with a water-guard hood.		

Part No. for filter fan SK - pebble grey (RAL 7032)	3324.100	3324.115	3324.024	3325.100	3325.115	3325.024	3326.100	3326.115	
- light grey (RAL 7035)	3324.107	3324.117	3324.027	3325.107	3325.117	3325.027	3326.107	3326.117	
Rated voltage V/Hz	230/50/60	115/50/60	24 (DC)	230/50/60	115/50/60	24 (DC)	230/50/60	115/50/60	
<b>Air displacement at 60 Hz (unimpeded airflow)</b>	105cfm/180 m³/h			160cfm/265 m³/h			330cfm/560 m³/h		
<b>Air displacement at 60 Hz (with standard exhaust filter)</b>	1 x SK 3325.200: 55cfm/95 m³/h 2 x SK 3325.200: 80cfm/140 m³/h 1 x SK 3326.200: 75cfm/130 m³/h			1 x SK 3325.200: 120cfm/205 m³/h 2 x SK 3325.200: 135cfm/230 m³/h 1 x SK 3326.200: 125cfm/215 m³/h			1 x SK 3326.200: 230cfm/390 m³/h 2 x SK 3326.200: 260cfm/495 m³/h		
<b>Air displacement at 60 Hz (with water-guard hood)</b>	85cfm/149 m³/h (with SK 3324.800)			140cfm/238 m³/h (with SK 3324.800)			190cfm/334 m³/h (with SK 3326.800)		
Axial fan with shaded pole motor	self-starting-shaded pole motor		DC motor	self-starting shaded pole motor		DC motor	permanent split capacitor motor		
Rated current	0.19 A	0.38 A	0.3 A	0.28 A	0.53 A	0.58 A	0.29 A	0.58 A	
	0.20 A	0.40 A		0.24 A	0.49 A		0.35 A	0.70 A	
Power consumption	30 W/35 W	30 W/35 W	7.2 W	41 W/38 W	41 W/38 W	14 W	64 W/80 W	64 W/80 W	
Noise level	52/48 dB (A)			54/56 dB (A)			59/61 dB (A)		
Temperature range	+ 14°F to + 131°F/- 10°C to + 55°C								
A (mm)	255			255			323		
B (mm)	100			100			124		
C (mm)	222			222			290		
D (mm)	Ø 150			Ø 150			□ 225		
E (mm)	224			224			292		
F (mm)	234			234			302		
G (mm)	(117)			(117)			(151)		
Ratings per EN 60 529/10.91	IP 43 standard NEMA 12/IP 54 when used with a fine filter in combination with a filter fan sealing frame. NEMA 3R/IP 55 when used with a fine filter in combination with a water-guard hood.								



**Filter fan**

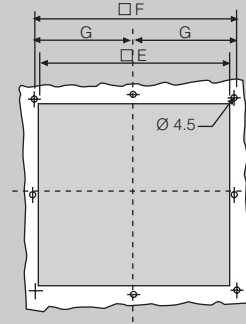
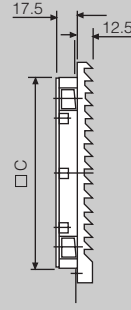
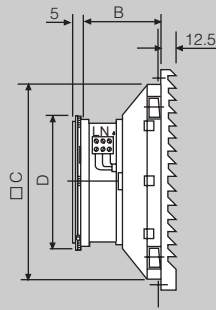
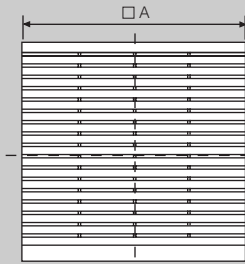
SK 3321.... / SK 3322.... / SK 3323.... / SK 3324....  
SK 3325.... / SK 3326.... / SK 3327

**Exhaust filter**

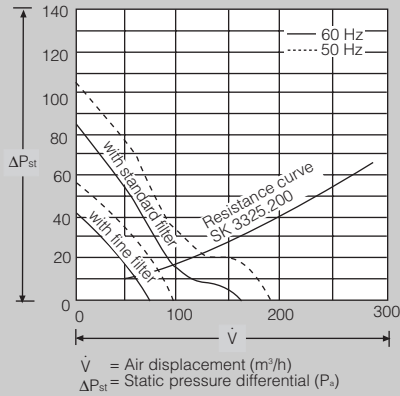
SK 3323.200  
SK 3325.200  
SK 3326.200

**Installation cutout**

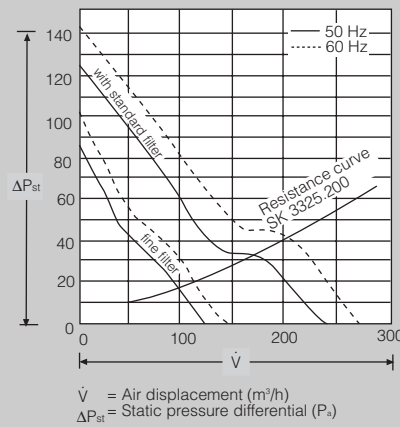
SK 3321.... SK 3324....  
SK 3322.... SK 3325....  
SK 3323.... SK 3326....



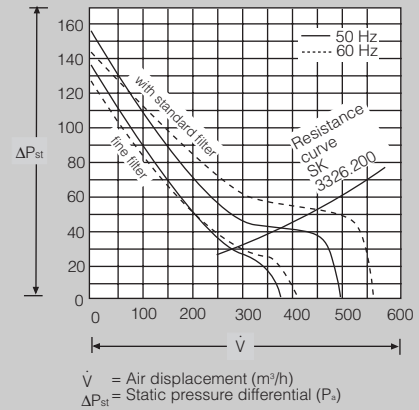
**Performance diagram SK 3324....**



**Performance diagram SK 3325....**



**Performance diagram SK 3326....**



**Panel Heaters**



Rittal's small, powerful and sturdy panel heaters can help prevent malfunctions, corrosion and frost build-up in enclosures.

**Configuration:**

- Heater, ready for mounting, with attached 1 ft./3 m power cord or terminal block. (SK 3102.000 includes integral fan).

**Technical description:**

- To achieve exact temperature management inside an enclosure, installing an SK 3110.000 thermostat is recommended.
- PTC heating element limits surface temperature.
- The efficiency of the SK 3107.000 heater can be increased by adding an SK 3108.000 axial fan.
- All heaters can be easily and quickly installed with screws (included) on mounting panels, or snapped into 35 mm deep DIN EN 50 022 rails.
- Maximum efficiency can be achieved when panel heaters are installed vertically with cable entry from below.
- To develop the required convection, heaters need at least 2"/50 mm clearance at the top or bottom. Distance from steel side walls should be no less than .4"/10 mm, from thermoplastic materials at least 1.5"/35 mm.
- In general, installation of a panel heater is recommended to prevent build up of condensation, even when heat exchangers and air conditioners are used.
- The heater housings are made of sturdy, black anodized aluminum.

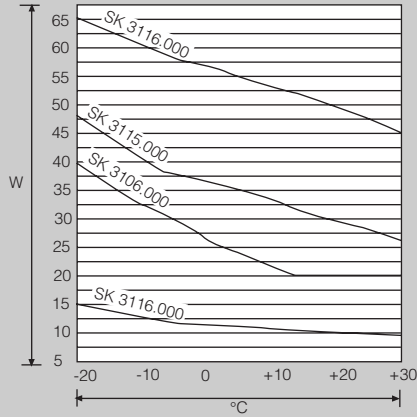
<b>Part No. SK</b>	<b>3105.000</b>	<b>3106.000</b>	<b>3115.000</b>	<b>3116.000</b>	<b>3107.000</b>	<b>3107.000**</b> <b>+3108.110**</b> <b>3107.000***</b> <b>+3108.000***</b>	<b>3102.110**</b> <b>(incl. fan)</b> <b>3102.000***</b> <b>(incl. fan)</b>
Rated voltage Volt/Hz	110 - 240 V AC/DC					115/50/60**	115/50/60**
<b>Continuous heat output at Tu =20°C</b>	<b>10 W</b>	<b>20 W</b>	<b>30 W</b>	<b>50 W</b>	<b>130 W</b>	<b>200 W*</b>	<b>300 W*</b>
Pre-fuse T	2 A	2 A	4 A	4 A	4 A	8 A**/4 A**	8 A**/4 A**
Special voltage available on request. Specifications subject to change.							

\* performance for heater with fan.

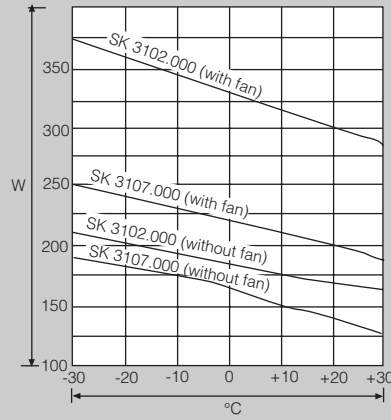
\*\* 115/50/60

\*\*\* 230/50/60

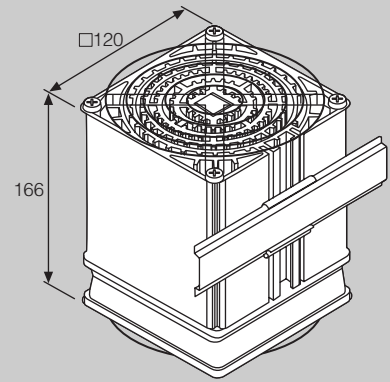
**Performance diagram SK 3105.000 / SK 3106.000 / SK 3115.000 / SK 3116.000**



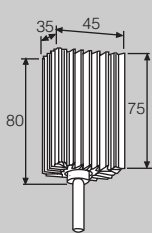
**Performance diagram SK 3102.000 / SK 3107.000**



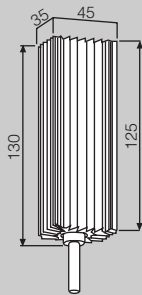
**SK 3102.000**



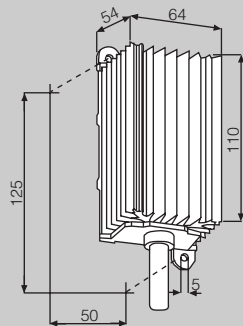
**SK 3105.000**



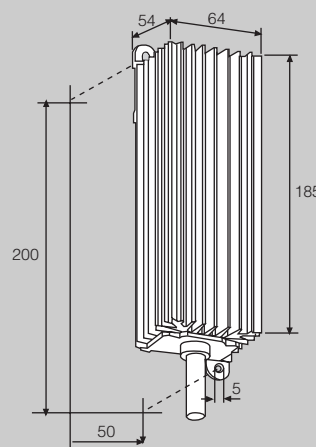
**SK 3106.000**



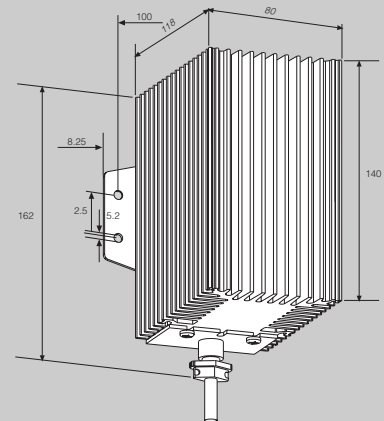
**SK 3115.000**



**SK 3116.000**



**SK 3107.000**



# CP 6500 CONTROL PANEL ENCLOSURES... SIMPLY PERFECT!

These new control panel enclosures are based on Rittal's proven AE Series and are ready for installation on a CP 6500 support arm system. Their features include aluminum front panels and handles, reinforced roof, rear door, and installation rails welded to the inside side walls.



- ▀ **NEMA 12/IP 55.**
- ▀ **Double protection against corrosion: E-coat primer plus powder coat.**
- ▀ **Rear door for easy maintenance and service.**
- ▀ **Unlimited component installation options.**



### Example 17 and 18

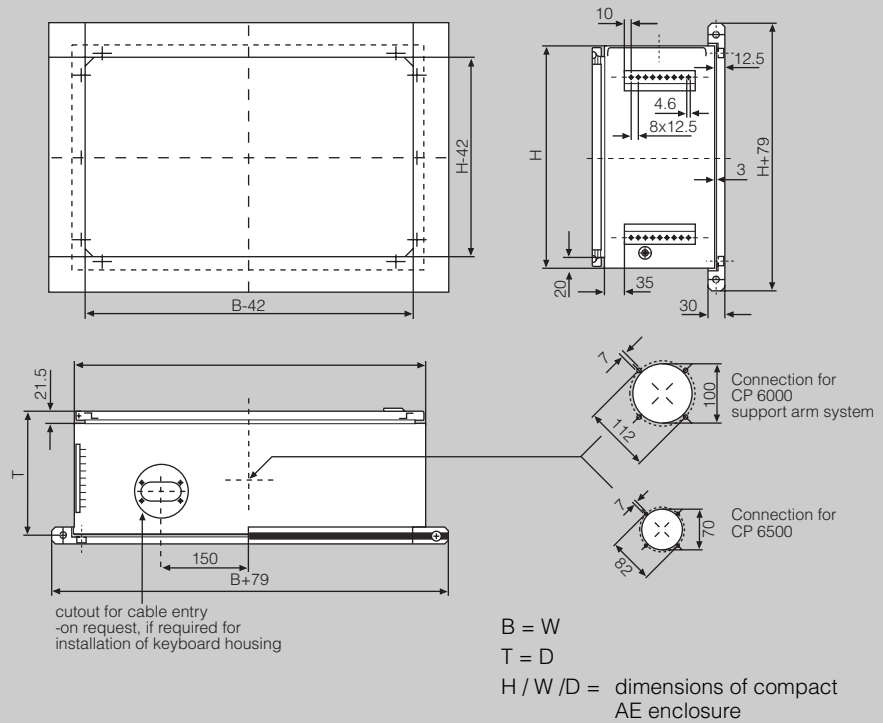
- Control panel enclosures based on AE
- Aluminum front panels finished per customer specification
- Integrated handles on the sides
- Ready for mounting to CP 6500 support arm system hanging or upright (by turning the housing).

CP 6500 control panel enclosure	
Dimensions H x W x D mm	Part No. CP
380 x 380 x 210	<b>6530.200</b>
300 x 380 x 210	<b>6531.200</b>
500 x 500 x 210	<b>6532.200</b>
380 x 600 x 210	<b>6530.200</b>

## AE Series Operator Enclosure With VIP 6000 Frame

The right frame when more depth is required.

Every compact AE enclosure can be fitted with a modular VIP 6000 frame. The large AE door provides extra room for service and maintenance.



	Part No. CP
Operator enclosure with VIP 6000 frame	<b>6541.009*</b>

Configuration	Part No. CP	Specification number
Housing with integrated roof or bottom reinforcement, rear door, aluminum front panel and VIP 6000 front frame. Mounting profiles on sides inside enclosure.	<b>6 5 4 1 . 0 0 9</b>	

### Connection for support arm system

none	6 5 4 1 . 0 0 9	<b>0</b>	
CP 6000 at top	6 5 4 1 . 0 0 9	<b>1</b>	
CP 6000 at bottom	6 5 4 1 . 0 0 9	<b>2</b>	
CP 6500 at top	6 5 4 1 . 0 0 9	<b>3</b>	
CP 6500 at bottom	6 5 4 1 . 0 0 9	<b>4</b>	

### Connection for cable duct

none	6 5 4 1 . 0 0 9	X	<b>0</b>	
at bottom	6 5 4 1 . 0 0 9	X	<b>1</b>	

### Dimensions

Standard dimensions as for AE...	6 5 4 1 . 0 0 9	X	X	
Other dimensions (Height x Width x Depth)	6 5 4 1 . 0 0 9	X	X	

\* Special Order

**Order example 1**  
**Order example 2**

6 5 4 1 . 0 0 9	<b>1</b>	<b>0</b>	AE 1050.6000
6 5 4 1 . 0 0 9	<b>4</b>	<b>1</b>	HWD 352 x 537 x 350mm

### Order example 1

**Part No. CP 6541.009 10 AE 1050.600** = enclosure with integrated roof reinforcement, rear door, aluminum front panel and VIP 6000 front frame.

Includes mounting profiles on side inside enclosure.

**With CP 6000 support arm connection at top, no cable duct connection, with standard dimensions of AE 1050.600**

(H x W x D = 500 x 500 x 210mm).

### Order example 2

**Part No. CP 6541.009 41 H x W x D 352 x 537 x 350mm** =

enclosure with integrated bottom reinforcement, rear door, aluminum front panel and VIP 6000 front frame.

Includes mounting profiles on side inside enclosure.

**With CP 6500 support arm connection at bottom and cable duct connection at bottom, with following special dimensions H x W x D 352 x 537 x 350mm.**

### Note:

**When enclosure W = 21.14"/537mm, the following VIP 6000 accessories can be installed:**

19" keyboard housing with installation depth:

- 1.73"/44mm,

Part No. see pages 8/9, 14/15.

- 4.13"/105mm,

Part No. see pages 8/9, 14/15.

19" keyboard housing with depth of:

- 1.06"/27mm,

Part No. see pages 8/9, 14/15.

**Special, adapted accessories are available for other heights and widths.**



# AE SERIES OPERATOR ENCLOSURE

With VIP 6000 Frame



## Configuration:

- Operator enclosure with:
- integrated roof- or bottom-reinforcement
  - connection for CP 6000 or CP 6500
  - support arm system
  - aluminum panel
  - front frame (included – not mounted)
  - rear door

## Approvals:



## Material:

*Enclosure and rear door:*  
sheet steel

*Front panel (.12"/3mm) and frame profile:*  
aluminum

*Frame corner pieces:*  
die-cast zinc

## Finish:

*Enclosure and door:*  
E-coat and powder painted, light grey (RAL 7035), textured

*Front panel:*  
natural anodized

*Frame profile and frame corner pieces:*  
powder painted, light grey (RAL 7035), textured



**Clip board**  
displays manuals, drawings, etc.  
at eye level.  
Part No. CP 6013.000



Complete system solutions per  
your specifications . . .



. . . including special colors.



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## **19" Electronic Components**



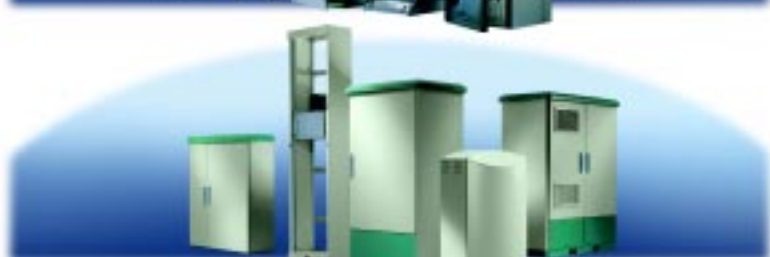
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